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INDIA RUBBER WORLD

CAOUTCHOUC — HEVEA BRASILIENSIS — GUTTA-PERCHA — PALAQUIUM GUTTA

Edited by HENRY C. PEARSON—Offices, No. 35 West 21st Street, NEW YORK.

Vol. XXXIV. No. 8. JUNE 1, 1906. 35 Cents a Copy. $3.00 Per Year.

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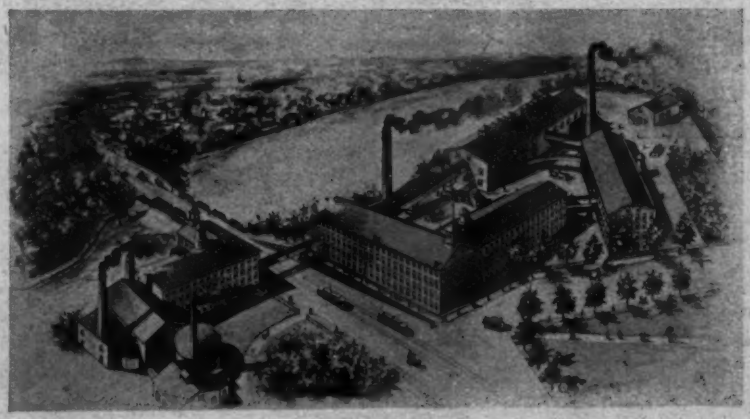

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INDIA RUBBER WORLD
CAOUTCHOUC GUTTA-PERCHA

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MR. BURGESS'S REPORT ON RUBBER.

IN relation to the report by Mr. P. J. Burgess on how he found plantation rubber regarded in Europe, which we summarize on another page, the first point for comment is the extreme frankness with which the results of his investigations have been stated. It is to be considered that the position held by Mr. Burgess is one created by the Federated Malay States government, at the request of the associated planters there—who, we understand, contribute to his compensation—really for the purpose of promoting rubber culture.

Mr. Burgess personally, as well as the planters in question, and their government, is enthusiastically committed to the feasibility of rubber planting; they have been encouraged by the progress made in the development of the plantations, and by the liberal rate of yield thus far. It would have been only natural, in view of such hopes as are entertained in the Malay States of a great future source of wealth in rubber, if Mr. Burgess should have given prominence to whatever he may have heard in Europe in favor of the plantation product.

On the contrary, in presenting the views derived at first hand from leading rubber manufacturers, he has prepared an official report which, on first reading, might be taken as distinctly unfavorable. Of course, this is no more than proper. If the Ceylon and Straits "Pará" rubber is wanting in merit in any way, nothing can be gained in the end in concealing any facts now—unless in the way of facilitating the sale of plantations to the European public. This. we believe, however, is not the chief motive of the Far Eastern planters. They have planted trees for their own profit, as a permanent investment, and they want to know just how to value the product, with a view to improving it if the rubber now being marketed falls below the standard they are aiming at. All this is commendable, and Mr. Burgess's report is just what is needed under the circumstances.

The essence of the report really is that the European manufacturers, who have not been indifferent to the claims of the new rubber, are not yet prepared to accept it, for general use, in the place of Pará rubber, which for more than a half century has been the standard. Plantation rubber from the Far East on arrival at the factory shows physical differences from "native" rubber; it does not adapt itself to the established factory practice; and the test of time is needed to determine how goods made from it will wear.

The manufacturer is right in maintaining a conservative policy in the matter of adopting a new material, which the Far Eastern rubber really is, even if its difference from other rubbers should in the end prove more apparent than real. It would be strange if the planters, at the outset, should have prepared their rubber in the best possible manner, and there is reason to believe that already their product is better prepared than at first. But the fact that the rubber is different in appearance,

and does require special treatment in the factory, is not necessarily unfavorable.

Ever since the industry was begun, based upon Pará rubber, supplies from new sources have been coming forward, until now less than half the rubber used is of the Pará grades. Every new sort has required special treatment, or has been found adapted to special uses, and now there are African rubbers, unheard of in Goodyear's time, selling for four times the price of good Pará when he discovered vulcanization. Plantation rubber is good rubber naturally; it will be improved in preparation; and it is bound in time to be the chief dependence of the industry. Mr. Burgess has done a good work, however, in telling the planters that they have much work before them, in order to get the best possible results.

A NEW ERA IN RUBBER EXTRACTION.

THERE has been developed, principally in connection with the Mexican shrub known as "Guayule," a very considerable interest in the extraction of commercial rubber from plants not adapted to any method of tapping. Many processes have been utilized, all based in part upon the maceration of the plant as a whole, and the ultimate separation from the mass of all the rubber contained.

As is well known, very much of the world's present supply of rubber is obtained by methods other than the tapping of the trees. A vast amount of rubber—including the South American grades marketed as "Caucho," or Peruvian—has always been collected by felling the trees and "ringing" trunks at frequent intervals, to allow the latex to escape. Gutta-percha and Balata are obtained in the same way. The *Landolphia* climbers in Africa are torn down from the forest trees, and cut into small pieces, from each end of which the latex exudes. Some millions of pounds more of rubber are gained in Africa from plants which contain the material only in the roots, the bark of which is beaten off with stones, the gummy mass resulting being boiled by the natives to separate the rubber.

It is these various practices that have so rapidly narrowed the native sources of rubber. They are all due to the fact that so much more rubber is available from certain trees and plants by other means than tapping; the "root rubber" could not be obtained at all by tapping. Before cultivation was introduced it seemed likely that in time only the *Hevea* species would be left as the world's ultimate dependence, as these are invariably tapped, even in the most remote forests. Under cultivation, however, the *Castilloa*, *Kickxia*, and some other species are capable of being tapped successfully, but there remain a number of other plants, valuable for rubber, which are not likely to yield at a profit without the destruction of the plants.

There is thus suggested a much wider field for the scientific processes lately introduced in Mexico than in merely exploiting Guayule rubber. If the *Landolphia* climbers, for example, must be sacrificed, their yield ought to be largely increased, by scientific methods, over what is now obtained by the rude practices of the Congolese. It may be that some of the species not capable of being tapped will yet be cultivated extensively, with a view to destroying the plants and the final systematic extraction of all the rubber they contain. It would not be surprising if the owners of some of these processes, in the hunger for rubber, should even acquire plantations of trees capable of being tapped, in order to gain an immediate large return.

No doubt the widespread success of the new scientific treatment here referred to will temporarily increase the output of rubber from certain sections, but it will only hasten the destruction of existing rubber yielding plants. In any event the rubber planting interest of to-day has nothing to fear from the new condition; it may yet be the means of opening a new field of profitable planting.

It has been asserted, though of course accurate data are lacking, that more rubber can be obtained from a five year old tree by cutting it down and extracting all the latex than by tapping it for five consecutive years. The question may occur to some people, therefore: Why not do it, and replant?

There has been much condemnation of the wholesale destruction of wild rubber trees in Central and South America, whereby the unlettered natives have gained so much rubber. What will be said if scientific rubber hunters in the near future sweep over those countries, buying rubber plantations only to grind up the trees, and scouring forests for other latex bearers, every shred of which will disappear in the capacious maw of an extracting machine? But such a proceeding need not be viewed with horror. The main thing is to get rubber, and to get it quickly. The trees are not sacred, but only the rubber in them. Why not get it out, and in use, and replant fast enough to more than make up for what are destroyed.?

THE PRICE OF GUAYULE RUBBER.

THE attitude of the rubber manufacturer toward Guayule is interesting. In spite of the fact that more than a million pounds have already been used, there are very many who still look upon it as a laboratory product. They feel very strongly that to use a ton or two tons would endanger whatever part of their product that rubber touched. A little reflection, however, should lead them to the conclusion that if this rubber were really dangerous many millions of dollars worth of goods would to-day have been ruined and that probably some of the users would have "gone broke." Just why the trade should not welcome any kind of rubber, no matter from what source, is not at all evident. If 20,000,000 pounds of Guayule rubber could be brought in at one time, its effect would at once be apparent in the lowering of prices of other grades. That it can be substituted for many African sorts has already been proved. It is also an established fact that in many lines of mechanical rubber goods,

and even in boots or shoes, it has done excellent service.

This is not written with the idea of booming any one company or any specific process, but rather with the hope that manufacturers to-day will encourage the production of any and all gums from whatever sources that help to swell the crude rubber volume.

Incidentally, as the whole trade knows, the price of Guayule has suddenly dropped from 60 cents to 38 cents a pound. It would seem that rubber is worth more than this, and just why a higher price is not obtainable is an unanswerable question. The lowered price, however, will doubtless largely stimulate the production of the gum, provided those who are in the business of extracting it are able to make sufficient profit to warrant their staying in business.

THE VALUE OF CONCERTED ACTION in trade matters has lately been well illustrated in the success of some leading tire manufacturers in securing materially lower freight rates from the railway companies.

IT IS A SIGNIFICANT TENDENCY in the rubber industry in America that it is proving an attractive field for even foreign chemists of repute, as indicated in our British correspondence this month. There were great business successes won in the industry here in the days when the chemist in a rubber factory was shown little respect, but the "rubber kings" of those days are gone, and it is not certain that their methods would apply to modern conditions.

THEY HAVE HEARD IN COLORADO that Indians in the Amazon valley are great rubber gatherers. Colorado has Indians, and as the white men in that state have failed to develop the much vaunted native rubber successfully, the Navajos—the local "redskins"—have been set to collecting "rabbit weed." It is reported that this year "25,000 tons of the weed can be taken, producing rubber gum worth upward of $500,000." And all this from land which the United States Congress has leased to the "rubber" company for $180 a year. "The Indians seem to take a great delight in their work," it is reported, but their rate of compensation has not been mentioned.

THE RUBBER FOOTWEAR TRADE evidently is becoming less dependent upon weather conditions than was once the case, judging from the latest annual report of the United States Rubber Co. That report shows a decline in value of net sales of less than $\frac{1}{8}$ of 1 per cent. as compared with last year, although there was, by all accounts, very much less of what used to be called "rubber shoe weather." And the volume of business was much larger than the average for years past. Of course, the net results of an open winter on the business of a rubber shoe manufacturer are not all apparent in the same year, in view of the fact that unsold stocks are largely held by jobbers and dealers, but any one might have seen, during the past winter, that the wearing of rubbers was general on very many days where there was no snow.

THE GREAT NUMBER OF TIRES PATENTED has led us sometimes to wonder where all the money comes from to pay the patent office fees. We have wondered even more whence the money comes to organize companies to exploit some of the freak tires. Really, much more capital is wasted in this way than most people suppose. There has just been reported the puncture of a company formed a year ago to market a puncture proof tire, and in which considerable money was invested. The newspapers report: "The liabilities are estimated at about $9000, and the assets consist mainly of the patent."

IF ALL THE INDUSTRIES IN THE COUNTRY should experience such an increased demand for goods as has come to the rubber men as a result of the San Francisco disaster, no doubt some people would regard such an occurrence as a general good. It may be recalled that the introduction of fire engines into China was at first resisted on the ground that without fires now and then, to make new building necessary, carpenters and some other tradesmen would suffer for the lack of work.

A LONDON FINANCIAL WRITER figures that the market quotations for shares in one of the important rubber planting companies point to a valuation of $17 each for rubber trees at 6 years old—the age at which they become productive in the Far East. The British capitalist may be conservative by nature, but "rubber" has an exception to the rule. He certainly has gone wild over "rubber."

NEW TRADE PUBLICATIONS.

THE Sundries Department Catalogue of the Cleveland Rubber Works of the MECHANICAL RUBBER CO. (Cleveland, Ohio) contains illustrations and descriptions of an extensive line of rubber goods for the druggists', surgical, and stationers' trade, together with prices. The catalogue is well got up and the illustrations are particularly well executed. [6″ × 9″. 88 pages.]

TYER RUBBER CO. (Andover, Massachusetts) issue a handsome brochure with the title "Golden Anniversary for the 'Tyrian' Rubber Goods," being devoted to a story of fifty years of growth of this important druggists' sundries manufacturing company. It is illustrated with views of the factory buildings at various stages of progress, beginning in 1856. [7⅝″ × 5¼″. 18 pages.]

W. D. ALLEN MANUFACTURING CO. (Chicago) issue their Catalogue No. 22, devoted to their manufactures, many of which are adapted for use in connection with rubber goods—particularly their hose racks and hose reels, hose couplings, lawn sprinklers, nozzles, and the like. The company are manufacturers of Packings in large variety. [6⅝″ × 9¾″. 64 pages.]

CHARLES E. MILLER (New York), in his Automobile Cat alogue No. 8, describes and illustrates a great variety of Automobile, Motor Boat, and Motor Cycle parts and accessories, including many articles into which rubber enters, including the leading makes of tires. Mr. Miller claims to have "the largest automobile supply house in America." [7⅜″ × 9¼″. 200 pages.]

ALSO RECEIVED.

INDIA Rubber Specialty Co., Erie, Pennsylvania =I. R. S. Brand of Rubber Goods. [Mail order house.] 64 pages.

Pennsylvania Rubber Co., Jeannette, Pa.=New Tires for Old 8 pages.

"Ideal" Carriage Washer Co., Rochester. New York.="Ideal" Carriage and Automobile Washer. 16 pages.

THE OBITUARY RECORD.

W. H CUMMINGS.

WILLIAM H. CUMMINGS died on the evening of May 9 at his home, No. 386 Bergen avenue, Jersey City, after a brief illness. Accompanied by Mrs. Cummings, he had devoted a vacation of several weeks to travel in the southern United States and in Mexico, and immediately after their return home both were attacked by pneumonia, and Mrs. Cummings was still seriously ill at the time of her husband's death.

Mr. Cummings was born November 5, 1844, at Troy, New York, whence his family removed, while he was still very young, to Jersey City. His father, also named William H. Cummings, was at one time prominent in the car building industry, and established the Cummings Car Works at Jersey City. Upon his death the son, associated with an older brother, succeeded to the business, and in 1868 they built more extensive works at West Bergen, but the business was liquidated after the financial panic of 1873.

WILLIAM H. CUMMINGS.

The subject of this sketch shortly after the date last mentioned engaged in the business of commission merchant in old rubber scrap, which he conducted successfully to the end of his life. His business was located in New York city, and latterly at Nos. 54–56 Harrison street. He had three sons, who became interested in the business successively as they grew up, and for a number of years the style of the business has been William H. Cummings & Sons. The business is being continued under the same firm style by the three brothers, William L., Edward O., and Harold H.

Mr. Cummings was one of the two oldest members of the West Side Methodist Episcopal church, in Jersey City. He was a member of the official board and actively interested in the affairs of the church, and in other charitable work. He was a member of the board of directors of the Home of the Homeless, and was deeply interested in the work of the Newman Mission. Mr. Cummings became very widely known in the rubber trade, during his connection with it of more than 30 years, and formed many warm friendships. Funeral services were conducted at the late home of Mr. Cummings on Saturday afternoon, May 12.

* * *

WILLIAM FIRTH.

THE death is reported, at Edinburgh, Scotland, on April 30, of WILLIAM FIRTH, at the age of 78. Mr. Firth filled the position of secretary of the North British Rubber Co., Limited, from the formation of that company, in the summer of 1857, continuously for 48 years. In reporting his retirement from that position THE INDIA RUBBER WORLD [June 1, 1905] stated that he had outlived all the founders of the company and the original directors and officers, and practically all the original employés of whatever capacity. His devotion to their interests, for so long a time, was of great benefit to the company, while his personal character was such as to endear him to all with whom he was associated.

* * *

CARL VON SIEMENS.

THE death is reported at Mentone, France, of Carl Heinrich von Siemens, in his seventy-eighth year. He was born at Menzendorf, in Mecklenburg, on March 3, 1829. His brothers owed much to him for the energy with which he helped to further the extension and practical application of their inventions, more especially in Russia. During many years he conducted the manufactory of the Messrs. Siemens, at St. Petersburg, for telegraph apparatus, dynamos, etc. During eleven years he was in London, assisting in the management of Siemens Brothers & Co., Limited (of which he was chairman of the board at the time of his death), but after the death of Dr. W. von Siemens he took up his residence in Berlin. Carl von Siemens was personally in charge of the laying of the first transatlantic cable contracted for by the firm of Siemens Brothers. He received decorations from various countries in acknowledgment of his services, and hereditary rank of nobility was conferred upon him in Russia in 1895.

* * *

THOMAS D. QUINLAN, a traveling salesman for the Goodyear Rubber Co., and connected with that company for many years, died at the residence of his parents at Detroit, Michigan, on May 10.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India rubber and Gutta-percha, for March, 1906, and the first nine months of five fiscal years, beginning July 1, from the treasury department at Washington:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber	TOTAL.
March	$108,100	$ 37,438	$ 289,239	$ 434,777
July-February	834,554	1,303,164	1,836,312	3,974 030
Total	$942,654	$1 340,602	$2.125,551	$4,408,807
Total, 1904-05	670,551	1,062,731	1,831,748	3,565,030
Total, 1903-04	667,567	946,439	1,796,522	3,410,528
Total, 1902-03	596,799	948,505	1,623 362	3 168,666
Total, 1901-02	457,003	914,455	1,252,572	2.624,030

NEW JERSEY LAW ON TIRES.

THE new Motor Vehicle law in New Jersey, adopted during the past month, contains this prohibition of chain grips on automobile tires:

No motor vehicle shall be fitted with a chain when used except on gravel, macadam, or other made roads, except upon natural dirt, asphalt, cobble, Belgium block or vitrified brick pavements; provided, however, that tires may be fitted with a chain when used upon roads covered with a coating of at least one inch of snow or ice.

THE UNITED STATES RUBBER CO.'S ANNUAL REPORT.

THE fourteenth annual meeting of the shareholders of the United States Rubber Co. was held at 12 o'clock M., on May 15, at the registered offices of the company in New Jersey, at New Brunswick. The annual reports of the president and treasurer were presented and accepted, and directors elected for the ensuing year. The proposed amendment to the by laws, quoted in the May 1 issue of this Journal (page 267), was adopted. The official reports are presented herewith in full:

PRESIDENT'S ANNUAL REPORT.

TO THE STOCKHOLDERS OF THE UNITED STATES RUBBER CO.: Your company has continued to prosper during the past year notwithstanding weather conditions have been generally unfavorable to the rubber boot and shoe trade.

TREASURER'S REPORT.—The treasurer's report hereto attached gives the result in detail of the operations of the company and its subsidiary companies (other than Rubber Goods) for the fiscal year ending March 31, 1906.

PROFITS.—The net profits for the year are $3,881,270.23 as against $3,761,922 63 the previous year. For comparison, however, $276,769 97, being the amount of dividends received upon the preferred stock of the Rubber Goods Manufacturing Co. held by this company, should be deducted, leaving $3,604,500.26 as the net earnings of the United States Rubber Co. and its subsidiary companies (exclusive of the Rubber Goods company). The surplus of the company and subsidiary companies (exclusive of Rubber Goods company) at the close of this year is $5,022,279.72, as against $3,987,101.49 last year.

VOLUME OF BUSINESS.—The net sales of the company for the year were $32,868,594 00. as against $32,931,210.86 the previous year—a slight falling off, due undoubtedly to the exceptional mildness and absence of snow that characterized the winter upon the Atlantic seaboard.

EMPLOYES' PROFIT-SHARING PLAN.—The beneficial results of the employés' profit-sharing plan instituted about two years ago are emphasized more and more as time passes, and thus far there has developed no point of weakness in the plan.

CONDITION OF FACTORIES AND MACHINERY.—The extensive manufacturing plants belonging to the company, as well as the machinery and tools, have been kept up to the high standard of efficiency maintained during the past few years and the cost thereof charged in expense accounts.

DIVIDENDS.—The company has paid its regular quarterly dividends at the rate of 8 per cent. per annum upon its first preferred stock, and at the rate of 6 per cent. per annum upon its second preferred stock issued during the year under the contract of May 12, 1905, with A. N. Brady, syndicate manager, approved by the stockholders in special meeting, May 25, 1905. No dividend has been paid upon the common stock.

It has been the policy of the directors to strengthen the company by adding to its surplus and by improving its efficiency in order to give assurance of the continuance of dividends upon its preferred stocks before the resumption of dividends upon the common stock, it being believed that in the end this conservative policy will result to the best interests of all the stockholders.

It is to be desired that in industrial properties there shall be established stability and regularity of dividends, such as obtain in the best railway properties; for example, New York Central railroad, having paid dividends at the rate of 5 per cent. for some years past, is valued at over $135 per share, and Pennsylvania railroad, now paying 6 per cent., at about the same price—the average yield of the two stocks being less than 4½ per cent. At $133 per share our first preferred stock and at $100 per share our

TREASURER'S REPORTS.

UNITED STATES RUBBER CO. AND SUBSIDIARY COMPANIES.

[Not including Assets or Liabilities of Rubber Goods Manufacturing Co., or of its Subsidiary Companies.]

CONSOLIDATED GENERAL BALANCE SHEET, MARCH 31, 1906.

ASSETS.

Property and plants (including shares of R. G. M. Co.)		$ 72,161,025.12
Inventories, mfd. goods and materials	$16,691,911.46	
Cash	2,275,805.78	
Bills and loans receivable	2,710,163.58	
Accounts Receivable	8,570,596.56	
Securities Owned	7,519,864.94	
Miscellaneous Assets	502,368.51	38,270,710.83
Total Assets		$110,431,735.95

LIABILITIES.

Capital stock, First Preferred	$35,067,000 00	
Capital stock, Second Preferred	9,586,300.00	
Capital stock, Common	25,000,000.00	$ 69,653,300.00
Boston Rubber Shoe Co., debentures		4 800 000 00
U. S. Rubber Co., funding notes		8,000,000.00
Fixed surpluses (Subsidiary companies)		8,134,849.37
Loans and notes payable	$9,899,928 91	
Merchandise accounts payable	2,842 430 29	12,742,359.20
Deferred liabilities		233,798.16
Reserve for depreciation of securities		1,000,000.00
Reserve for dividend		845,149.50
Surplus		5,022,279.72
Total Liabilities		$110,431,735.95

[NOTE.—Haskell & Sells, public accountants, certify that on March 31 the quick assets exceeded liabilities other than capital and surplus, to the extent of $12,102,090.78.]

UNITED STATES RUBBER CO. AND SUBSIDIARY COMPANIES.

[Not including Earnings of Rubber Goods Manufacturing Co., or of its Subsidiary Companies.]

CONSOLIDATED INCOME STATEMENT FOR YEAR ENDING, MARCH 31, 1906.

Gross sales, boots and shoes and miscellaneous		$54.723,756.53
Net sales, boots and shoes and miscellaneous		$32,868,594.00
Cost of goods sold		26,482,328.53
Manufacturing profits		$6,386,265.47
Freight, taxes, insurance, general and selling expenses		1,480,760.26
Operating profits		$4,905 505.21
Rubber Goods Mfg. Co., dividends as adjusted	$276,769.97	
Other income	102,798.19	379,568.16
Total income		$5,285,073 37
Less:		
Interest and commission on Funding notes and borrowed money	$900,789 73	
Interest on Boston Rubber Shoe Co. debentures	240,000.00	
Interest allowed customers for prepayments	193,786.40	1,334,576.13
Net income to surplus		$3,950,497.24
Deductions for bad debts, etc		69,227.01
Total Surplus		$3,881,270.23
Dividends		2,846,092.00
Surplus for period		$1,035,178.23
Surplus April 1, 1905		3,987,101.49
Surplus March 31, 1906		$5,022,279.72

JOHN J. WATSON, JR., Treasurer.

second preferred stock would each yield 6 per cent. upon the investment. Upon such considerations, it has seemed conservative and just to defer dividends upon the common stock at least until such time as the management shall be reasonably satisfied that, having begun their payment, the same can be maintained, although, —even without present dividends in cash, the common stock, by enhancement of value through accumulation of a surplus, will have shared in the prosperity of the company.

RUBBER GOODS MANUFACTURING CO.—Over 80 per cent. of the capital stock of the Rubber Goods Manufacturing Co. has been acquired by the United States Rubber Co. during the year, under the contract of May 12, 1905, above mentioned, with A. N. Brady and other directors. This has been accomplished through the exchange of the preferred and common shares of the Rubber Goods company for the first and second preferred shares of the United States Rubber Co. As shown by the application, dated October 5 1905, to the committee on stock list of the New York Stock Exchange, of which printed copies can be obtained, on that date there had been issued under that contract 51,148 shares of first preferred stock for an equal amount of Rubber Goods first preferred stock, and 83 873 shares of second preferred stock for 137.163 shares of the common stock of the Rubber Goods Manufacturing Co. Since that date additional exchanges have been made, and may yet be made, under authority of the directors.

The beneficial results to both companies of this acquisition your directors believe will be very great Heretofore, the product of the United States Rubber Co. has been confined almost exclusively to rubber footwear, of which the use is dependent, more or less, upon the severity of the winter—while the Rubber Goods company manufactures no footwear, but a great variety of miscellaneous rubber goods, as, for example, belting, packing and hose, automobile, bicycle and carriage tires, flooring, clothing, druggists' sundries, etc. In general, both companies use the same raw materials, and both have had distributing agencies in the same centers. Consequently, savings can be effected in the purchase of supplies and the distribution of goods, and the diversity of product tends to equalize the volume of business and the profits in years of varying character.

Rubber footwear, though, as already observed, in some degree dependent upon the weather, is a necessity, and therefore its sale is not specially affected by general conditions of trade. Practically the opposite is true as to rubber miscellaneous goods. This is aptly illustrated by the business in the past mild winter under trade conditions generally favorable. The net sales of the United States Rubber Co. for the year show a slight decrease compared with those of the previous year, while those of the Rubber Goods company show an increase of over $3,000,000.

Should the next winter be severe, and general business decline, it may be expected that the sales of the United States Rubber Co. will increase to a greater extent than will those of the Rubber Goods Manufacturing Co.

The dissolution of the Rubber Goods Manufacturing Co. may be effected at any time by the United States Rubber Co. owning much more than two thirds of its shares, but for the present such dissolution is held in abeyance.

EXPORT BUSINESS.—Our exports of rubber footwear during the past year, although still relatively small, show a gratifying gain over any previous year.

GENERAL RUBBER CO. AND CRUDE RUBBER.—The cash capital of the General Rubber Co. has been increased during the year from $1,000,000 to $3 000,000, the additional stock having been subscribed and paid for: $1,000,000 in the interest of the United States Rubber Co., and $1,000,000 by the Rubber Goods Manufacturing Co. In order to provide ample working capital for the important business to be transacted by the General Rubber Co., there have been authorized $9 000,000 of 4½ per cent. ten year debentures of that company. $6,000 000 of these debentures have been sold, guaranteed by the United States Rubber Co. and the Rubber Goods Manufacturing Co., and the remaining $3,000,000 are retained for future requirements.

The most important problem of the future to the manufacturing interests of this company is the obtaining of its requirements of crude rubber to the best advantage, and your president looks upon the formation of the Generel Rubber Co., with its large capital and resources, as one of the most important steps taken by the United States Rubber Co. With the control of the Rubber Goods company, the United States Rubber Co., has become by far the largest consumer of crude rubber in the world, and your president feels that the advantages that may reasonably be expected to result from our present facilities for handling this branch of our business can hardly be overestimated, and are a guarantee of the future prosperity of this company.

OTHER PROPERTIES.—As it has been found that your company could manufacture for less than it can purchase certain articles which enter into or form a part of its goods, important additions in this direction have been made during the year. For such and other acquisitions, which have been made by authority of the board of directors, through directors and others, all as set forth in its minutes, there have been issued shares of first preferred stock, in addition to those outstanding October 5, 1905.

EXCHANGE OF CERTIFICATES.—A large proportion of the certificates for (original) preferred stock have been exchanged for those of the first preferred stock authorized at the meeting of May 25, 1905. It is desirable that the remainder of the (original) preferred stock now outstanding shall be exchanged, as the old certificates have ceased to be a delivery on the New York Stock Exchange.

Owing to the importance of the transactions during the year, this report will be sent to the stockholders in advance of the annual meeting, and as usual the record books of the directors and the executive committee will be open for inspection by stockholders at the annual meeting. Respectfully submitted,

SAMUEL P. COLT, President.

New Brunswick, New Jersey, May 15, 1906.

THE ANNUAL ELECTION.

NINETEEN directors were chosen, being two more than last year. The seventeen members of the old board were reëlected. The new members are Messrs. Dale and Kelley, representatives of the Rubber Goods Manufacturing Co. interest. The number of terms for which each member of the board has been chosen is indicated:

WALTER S. BALLOU, Providence, Rhode Island. [Fourth term.]
ANTHONY N. BRADY, No 54 Wall street, New York. [Third term.]
ELIAS C. BENEDICT, No. 80 Broadway, New York. [Fifth term.]
SAMUEL P. COLT, Bristol, Rhode Island. [Fifteenth term.]
HARRY E. CONVERSE, Boston, Massachusetts. [Ninth term.]
COSTELLO C. CONVERSE, Boston, Massachusetts. [Sixth term.]
CHARLES H. DALE, No. 16 Warren street, New York. [First term.]
JAMES B. FORD, No. 42 Broadway, New York. [Fifteenth term.]
J. HOWARD FORD, No 42 Broadway, New York. [Fifteenth term.]
FRANK S. HASTINGS, No 80 Broadway, New York. [Second term.]
FRANCIS L. HINE, No. 2 Wall street, New York. [Fourth term.]
HENRY L. HOTCHKISS, New Haven, Connecticut. [Fifteenth term.]
ARTHUR L. KELLEY, Providence, Rhode Island [First term.]
LESTER LELAND, Boston, Massachusetts. [Eighth term.]
FREDERICK M. SHEPARD, No. 787 Broadway, New York. [Fifteenth term.]
FRANCIS LYNDE STETSON, No. 15 Broad street, New York. [Fifth term.]
WILLIAM H. TRUESDALE, No. 26 Exchange place, New York. [Second term.]

JOHN D. VERMUELE, No. 503 Broadway, New York. [Tenth term.]

JOHN J. WATSON, JR., No. 42 Broadway, New York. [Second term.]

The newly elected board met in New York on May 19, and, after organizing, reëlected the following officers and executive committee for the ensuing year:

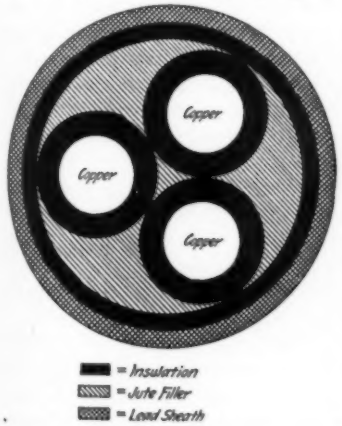
President—SAMUEL P. COLT.
First Vice President—JAMES B. FORD.
Second Vice President—LESTER LELAND.
General Manager—HOMER E. SAWYER.
Treasurer—JOHN J. WATSON, JR.
Assistant Treasurer—W. G. PARSONS.
Secretary—SAMUEL NORRIS.
Assistant Secretary—JOHN D. CARBERRY.

The Executive Committee consists of Samuel P. Colt, James B. Ford, Lester Leland, E. C. Benedict, Walter S. Ballou, and Anthony N. Brady.

PAPER V. RUBBER INSULATION.

PRIOR to 1895 electric power cables were insulated almost exclusively with India-rubber. About that time paper was introduced as a substitute for rubber for cable insulation, but it was slow taking hold on the engineers, because those gentlemen looked upon the innovation with suspicion. Persistence won out, however, and to-day many large users of electric cables are using none but those with paper insulation. In *Engineering News* (March 15) Mr. W. I. Tamlyn points out some of the more objectionable features of the different types of insulation. It is admitted that both paper and rubber are in successful use in many places, and have been for a number of years, so that the test of time cannot be called in to settle the question of preference. Mr. Tamlyn considers the subject with particular reference to cables for three-phase distribution, to sub stations in cities. Cables for this service run in tile conduits underground, are of the three conductor type, and are usually operated at a frequency of 25 cycles and at potentials from 6000 to 12,000 volts.

A study of the accompanying illustration will make clear the difficulty of insulating the conductors in the type of cables under discussion. The cable shown in the picture is used in New York and carries a voltage of 6600. The conductors are each composed of 37 strands of copper, equivalent in conducting to No. 0000 A. W. G. solid wire. The insulation around each conductor is $\frac{3}{16}$ inch thick, while that between the three conductors and the lead sheath is $\frac{1}{4}$ inch thick. The whole cable is 2$\frac{5}{8}$ inches in diameter. Between each pair of conductors there is a wall of insulating material $\frac{3}{8}$ inch thick to withstand an effective voltage of 6600. There is $\frac{5}{16}$ inch of insulation between any conductor and the lead sheath.



There is one point upon which there is no dispute, says Mr. Tamlyn, and that is that the first cost of paper cables is less than the first cost of rubber cables, the difference being approximately in the ratio of $1.25 for paper to $2 for rubber. That being established, there arises the question of cost of maintenance and depreciation. These costs, if they have been determined, are not published, and it is practically impossible to get data concerning them.

Both paper and rubber cables are usually encased in a sheath made of lead with a small percentage of tin, or of lead with a thin coating of tin outside. Lead, like all other metals, is subject to electrolysis due to the return currents from grounded electric systems. The effect is to cause holes in the lead sheath, through which gases, moisture, etc., find their way. If moisture gets into paper insulation, the paper absorbs the water and becomes practically a conductor, thereby disabling the cable. It is said that trouble of this kind can usually be detected by the regular insulation tests before a burn-out takes place. The water in conduits and manholes of underground systems in cities holds in solution various acids and other solutions which are destructive to rubber. Besides, there are always present oils and gases that tend to deteriorate rubber. This deterioration, when it does occur, takes place so rapidly as to cause a burn-out before any trouble can be detected. These points, Mr. Tamlyn holds, go to show one advantage of the paper type of insulation over that of rubber.

It is pointed out that while the life of paper insulation may be said to be measured by the life of the protecting sheath of lead, it is yet to be proved that the life of rubber insulation is independent of the life of the sheath. It is said that when paper was first used for insulation it was unsatisfactory because it frequently cracked. This difficulty has been largely overcome by the employment of improved methods of treating and applying it, so that paper insulation as now made is said to last almost indefinitely, provided it is kept perfectly dry.

Where rubber insulation is used, the vulcanized form is preferred because of its greater mechanical strength and flexibility, and because it can stand a higher temperature. Vulcanized rubber, while more durable than pure rubber, is by no means free from deterioration. In order to afford good and reliable insulation against high tension currents, it must be made of a good quality of rubber, and great care must be used in the vulcanization.

Several years ago the New York Edison Co. made a series of tests of the energy loss in paper and rubber insulated cables. The results were so favorable to the paper type that since 1899 this company has installed no rubber cables except in a few places where the cables are subject to mechanical injury or other exceptional conditions.

It has been suggested that the ideal cable would be a combination of both rubber and paper. Some of these have been made, but were not a success because they carried the disadvantages as well as the advantages of both types.

In summing up, Mr. Tamlyn finds that neither kind of insulation is perfect. Each has its good qualities and its bad qualities; and each has its warm adherents whose fealty cannot be shaken. In a given case the success or failure of a cable depends largely upon the care used in the design and manufacture and upon service conditions

GUAYULE rubber in considerable quantities is being shipped from Tampico, Mexico, principally to London and Antwerp. One shipment of 7416 kilos is mentioned.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

IN recent months two references have been made in these notes to British firms who have added Balata belting to their existing manufactures. On the Continent also, especially in Germany, several firms have gone in for the business, so although the position of the Messrs. Dick, of Glasgow, as the principal producers, may not be seriously threatened, yet they must assuredly be feeling the increased competition. There is no doubt that Balata belting is increasing in popularity; though it is not suitable for hot situations, it is certainly superior to leather where continuous damp has to be reckoned with and the facility with which joints can be made yielding a smooth surface has popularized the belt for dynamo running. With regard to the price of the raw material, it does not seem that the new business will bring about much change. For some years the demand has not kept pace with the amount the merchants in the Guianas and Venezuela wished to put on the market, and when a friend of mine wrote from Venezuela two years ago to ask what was the matter with the trade I could only suggest that the decline in the solid gutta golf ball might have a good deal to do with it. It was suggested to me that the slackness in the submarine cable industry might have had to do with it, but unless I am much mistaken I don't think that Balata figures much in this class of work. Although there seems to be plenty of the raw material available, the difficulties in the way of its exploitation are such that the price is unlikely to show any real diminution from what has ruled for so long. If I am correctly informed the stuff cannot be gathered, and sold at a profit in England at less than 1*s.* 7*d.* per pound, so it may be taken that this represents the bottom price and that any change will be in the upward direction. From some figures at my disposal I understand that in Dutch Guiana, where tapping the trees is in vogue, the mean daily collection of one man is 7 gallons of latex, yielding 4 pounds of Balata per gallon: at 1*s.* 7*d.* per pound this works out at £2 4*s.* 4*d.* I don't know how much of this goes to the actual gatherer, but I suppose that the *crux* of the matter lies with him whether he gets enough to tempt him to undertake work which is associated with such difficulties and dangers.

BALATA BELTING.

AT the fifth International Congress of Applied Chemistry, held in Berlin, the subject of rubber analysis was brought forward by the late Dr. Weber. At the recent congress held in Rome, in April, it is seen that the mantle of the departed has fallen upon Dr. E. Marckwald, of Berlin, the subject of whose paper, done into English, was the actual condition of the analytical chemistry of rubber, including its derivatives and manufactured goods. Pending the publication of the paper, I must perforce content myself with a brief reference to it. Judging by the numerous scientific articles that have appeared in the *Gummi-Zeitung* (Dresden) during the last year or two, it is clear that the pioneer work done by Henriques and Weber has attracted quite a number of German chemists who will have to fight out among themselves the question as to which the layman is to consider as the greatest authority.===The Editor of *Tire and Motor* (New York) recently impressed upon his readers the fact that no one man was an expert in all branches of the rubber trade. No doubt this is true though the statement may not prove particularly palatable to the rubber expert in practice who is spreading his net far and wide to catch business. I see that Dr. W. A. Caspari, late chemist at the National Physical Laboratory, has commenced practice as a consultant in London. It is of course the ignorance of a humble journalist and no reflection whatever upon the doctor referred to that his name in connection with the subjects of this Journal was new to me until his paper on Balata and its resins was published in the Journal of the Society of Chemical Industry. Apropos of the National Physical Laboratory I may say that owing to the strong representations made by the Institute of Chemistry, the practice of undertaking ordinary professional work is to be discontinued. It was obviously unfair that an institution supported by public funds and intended specially for research and the standardization of instruments should enter into competition with professional chemists.===Following the lead of the late Dr. Weber and Mr. Heyl-Dia, Dr. Meyer, late chemist to the St. Helens Rubber Co. has taken up a post at an American rubber factory. It would appear that there are more prospects for the rubber chemist in America than in England though the British factories seem to afford good training grounds.

SOME RUBBER CHEMISTS.

As was not unexpected, the Anglo-Sicilian Sulphur company will shortly come to an end. Its action in reducing the output in Sicily and in regulating prices has had a good effect upon the industry, which it is now to be feared has somewhat troublous times before it. The direct cause of the above development is of course the utilization of the immense sulphur deposits in Louisiana, whereby the demand of America, which has always been Sicily's largest customer, will be fully met. Moreover, it is quite possible that America may do an export business. Another large customer for Sicilian sulphur is Scandinavia, in connection with the sulphite cellulose trade, and it seems probable that this business will largely decrease, owing to the use of Norwegian pyrites instead of sulphur. Whether or not the rubber trade will benefit by the break up of the Anglo-Sicilian company it is difficult to say at present, but I should the tendency must be towards lower prices, though, of course, it is quite possible that America and Sicily will come to some arrangement to prevent disastrous competition.

SULPHUR TRADE.

PERHAPS those who were involved in the recent trouble in Russia will think my headline rather too mild. Certainly the state of affairs at the big Prowodnik-Riga rubber works as related to me by one who was there at the time was alarming enough, though so many other events of the sort were happening in the country at the same time that no detailed notice has appeared in the English press. It appears that at the outbreak of disaffection troops, mostly Cossacks, were quartered within the confines of the works and, owing doubtless to race hatred between the workmen, who are Litheranians, and the Cossacks, as much as to anything else, the soldiers to

THE UPSET IN RUSSIA.

the number of 29 were done to death during the night. There seems no evidence that this was the work of the factory hands, but the soldiers' comrades evidently took it to be so and in the course of the next day shells were discharged at the works, doing a large amount of damage and bringing down the roof with its elaborate arrangement of sprinklers. My informant along with others beat a hasty retreat into an empty vulcanizing pan, which seemed best adapted to withstand the artillery, and here he had plenty of leisure to ruminate on the superior advantages of employment in a British factory as compared with some other countries. Unfortunately, the German manager of the golosh department went to the gate and was shot by a soldier. The works were closed down for 3 weeks and a government enquiry was held, but things have now resumed a normal condition.

As an addendum to the above, a word or two about the business may be of interest. The fourteen departments into which the manufactures are divided seem to comprise everything of importance that is made of rubber. The capacity of the works is evident from the fact of about 5000 workpeople being employed and the available horse power of the engines being 3000. The annual output of goloshes of one sort and another is put at over 8,000,000, China and other Eastern countries being large customers. The newest department is that of elastic thread, in which considerable progress has been made, though no doubt it will take a little time to earn the entire confidence of the Russian weaving mills, so as to get the business so long held by the British thread manufacturers. In contradistinction to what has obtained of late years in Great Britain the rubber proofed garment trade has assumed increased importance in Russia and the Riga company are putting down new spreading machines, as an addition to their plant. Both sexes of the upper classes have taken to wearing these garments in the summer months, the new demand being for well made goods of light make. The heavier proofed cloth for military uniforms has for long been a regular article of manufacture. With regard to the rubber sponge, in which the two big Russian works so long had all the business, the monopoly has broken down, owing to the secret of manufacture having been gained by other countries. China, I understand, is a large buyer of the rubber sponge.

THE PROWODNIK FACTORY.

AN interesting article on this subject appears in the *India-Rubber Journal*, from the pen of Mr. H. P. Stevens. In advocating that the amount of water in rubber should be taken into consideration in fixing the price, the author is echoing what has often been said before, but which has never made any progress towards fulfilment. This is not altogether due to conservatism or indifference; it is due to some extent, I imagine, to a feeling that there are onerous difficulties in the way and that the other cases quoted in favor of the change are not strictly parallel. Take, for instance, wood pulp, which is especially referred to by Mr. Stevens. This is a manufactured article and not a raw product, and the amount of moisture can be fairly accurately determined. I say fairly accurately, because it has been shown that the water is by no means uniformly distributed in the sheets, and unless a very particular procedure is adopted in sampling widely differing results may easily be obtained. I am not aware that any detailed work has been done to see how the water is distributed, in say a Pará biscuit, and if the proposed change is to be adopted it would be necessary to specify the details of the test very closely if disputes are to be avoided between buyer and seller. And apart from the sampling the heating of rubber to deprive it of moisture may easily be carried too far and thus lead to increase of weight by oxidation. I am not, in saying this, wishful of condemning the proposed procedure; I merely wish to point out that any such change must not be adopted without a careful consideration of the whole circumstances. If its inherent difficulties could be overcome—and I see no reason why they should not—the desirability of the change needs no emphasis when one considers the relative prices of rubber and water. Mr. Stevens says he has not seen any figures showing that plantation rubber is drier than South American, and that if this is so the fact ought to be taken into consideration in fixing the price of the former. I thought that it was well known that the reason of the plantation rubber fetching the higher price was due entirely to its less moisture, and that when the relative moistures are duly taken into consideration the native product really fetches the higher price with regard to actual rubber present.

MOISTURE IN RAW RUBBER.

THE severance of the connection between Mr. Johnson and Messrs. Spencer Moulton & Co., of Bradford-on-Avon, comes as a surprise to his many friends. In his capacity of manager Mr. Johnson was popular with the work people and to a no less extent with those such as travelers seeking business. These invariably met with a courteous reception there being nothing of the "man-in-power" demeanor about Mr. Johnson. His father, it may be mentioned, filled for many years the important post of chief locomotive engineer to the Midland Railway Co.

MR. J. JOHNSON.

AFRICAN rubber has largely taken the place of fine Pará rubber in late years for solution making, and where the product is sold at a corresponding reduction in price there is little to be said against it. Now that solution making has passed so largely out of the hands of the regular works into those of the cycle repair and outfit dealers, it is not surprising that many alterations in procedure are to be noted. One of these is the use of recovered rubber—not that which is produced from old vulcanized goods, but which is got by special processes from certain former of factory waste. One such description of waste is the felt cuttings from the tennis ball manufacture, the felt being faced with pure rubber solution, in order to effect its adhesion to the rubber ball. It follows, therefore, that when pure rubber can be got from a variety of sources some dealers in solution will be able to obtain their material more cheapely than others, and accordingly will be able to sell a compounding article at a lower rate than others who buy direct from the rubber factory. That there is a substantial profit in the solution business is evident from the fact that the highest priced rubber which comes to England (from the new plantations in Ceylon) is brought largely by solution makers, some of the general rubber manufacturers regarding it too expensive for their uses.

RUBBER SOLUTION.

THE Mitado Rubber Manufacturing Co. (Mitado Gomu Seizo Gomei Kaisha), of Tokio, Japan, perhaps the largest of the companies making mechanical goods in that country, is mentioned by a correspondent of THE INDIA RUBBER WORLD as having engaged successfully in the manufacture of bicycle tires.

RUBBER PLANTATIONS AND THEIR PRODUCT.

THE NEW RUBBER AS VIEWED IN EUROPE.

THE government rubber expert of the Federated Malay States, Mr. P. J. Burgess, M. A., F. C. S., has completed his report on a visit of six months to Great Britain, to investigate the India-rubber industry in its relation to the growth and preparation of raw rubber in the Malay peninsula. Being well introduced, he appears to have had no difficulty in gaining access to leading manufacturers and learning the details of manufacture, and also the views of the trade in regard to plantation rubber.

He states that he met uniformity of opinion among those who had practically made trial of Straits and Ceylon rubbers. All were agreed that the rubber was good and very serviceable, but by no means as good as South American fine Pará, either hard or soft cured. The plantation rubber is lacking in "nerve", it works soft between the masticating rollers, and its keeping qualities are inferior to South American Pará. After vulcanization the tensile strength is less and the elastic recovery of shape after deformation by stretching or compression is less perfect than shown by South American Pará under precisely similar conditions.

In several cases, notably at Silvertown, where accurate tests of all rubbers used are carried out, the recorded figures showed an inferiority of 8 to 15 per cent., with different samples of plantation as compared with native Pará rubber. The inferiority of the former was not confined to those physical properties capable of immediate measurement, but was also shown in the keeping qualities of the rubber. Samples of plantation rubber two and three years old had all shown marked deterioration, whereas samples of South American Pará of ages up to and over 40 years had preserved perfectly their tough and elastic qualities. While this feature of plantation rubber may have been due to errors committed in preparation of the samples two or three years ago, it confirms practical users of rubber in their opinion that plantation rubber is not reliable, and certainly not the equal of South American Pará.

The cause of the inferiority of plantation rubber is not known. Some manufacturers believe it to be due to differences in the locality, climate, and conditions under which the trees have been grown; others that is the result of different modes of curing and exporting, and again difference in the age of the tree from which the rubber is gathered may be the reason for difference in quality. Mr. Burgess makes a further suggestion, which he believes has not before been made. The rubber trees of South America which are tapped are the finest and most sturdy in the forest—the result of the survival of the fittest. Naturally only the best specimens become mature, and the native in tapping selects the best of the trees he conveniently can. On the plantation all the trees which survive the first planting are tapped on attaining sufficient size.

Mr. Burgess proposes to endeavor to ascertain by tapping selected trees on the plantations whether the rubber extracted is of finer quality than that of the average rubber on the same ground. To make his test more thorough he has had made in Manchester machines for practically working up and vulcanizing rubber, with which to make test pieces of vulcanized rubber from the product of trees grown in various localities, of different age, and cured in different ways, making likewise physical tests of such rubber, and of samples of South American Pará.

Mr. Burgess does not feel in a position to say how rubber should best be coagulated and prepared for export, but is inclined to recommend that as little as possible in the way of acids be added to the latex. Where a washing machine is used the milk might, he thinks, be allowed to coagulate by simply standing 24 or 36 hours. Manufacturers seem to object to the use of any acid during rubber coagulation for fear that traces of it might be left in the rubber even after washing. Whether the objection to the use of a volatile acid in coagulating rubber is really sound can only be decided by practical tests, but the objection does exist. But to avoid using any coagulant it is only practically possible where a mechanical treatment of the rubber by a washing machine is in use, and then it is a matter for consideration whether the use of acid, which has been extremely convenient in assisting coagulation, should be discontinued from fear that such use will produce a rubber that will not stand the test of time and which will perhaps injure in future the reputation of plantation rubber.

Before the introduction of the washing machine and the formation of crêpe rubber, drying had been a troublesome operation. Artificial heat had generally led to the softening of the rubber and often, through inefficient control of the temperature, caused it to become "tacky." Crêpe rubber dries easily and well if hung in a dark but airy shed, and the preparation of rubber in this form appeared to have solved the old difficulties in drying.

There have been suggestions in regard to vacuum drying on estates, and Mr. Burgess investigated the vacuum drying of washed rubber in certain British factories. He reports that rubber dried in this way is softened by the heating, which is objected to by some manufacturers, though by those who have adopted vacuum drying this is not regarded as important, chiefly because the cause of softening is known and it is regarded only as preliminary to the softening which occurs in the mastication which is the next step in rubber manufacture. But if plantation rubber were offered in soft and adhesive masses Mr. Burgess feels that serious objection would naturally be made. Taking into consideration the fact that plantation rubber is always inclined to be soft he would not recommend any form of drying in which artificial heat is necessary, and which involved the elaboration of machinery and increase in power in doing what, with washed rubber, can be done in a more simple, safe, and natural manner.

By all the manufacturers seen in Europe a lively interest was shown in plantation rubber and in the prospect of being able to obtain rubber of fine quality from the East. The immediate need is more quantity, and exaggerated views prevail of the amount to be expected in the near future from plantations. Manufacturers were not inclined to deal directly with the producer in small lots, the supply being too small and irregular to justify a departure from existing methods of buying, besides which plantation rubber requires different treatment in working. Unfortunately some of the

plantation rubber has shown the defect of softness and tackiness, and these samples have tended to injure the reputation of plantation rubber. Manufacturers were without decided opinions as to the form in which rubber is exported. As long as it is dry and clear enough to show the absence of impurities, the form of the rubber was considered relatively unimportant. Preference for the crêpe form was shown by some, and most were agreed that this was as good a condition of packing and exporting rubber as any.

There is one danger connected with the use of a washing machine on a plantation, says Mr. Burgess. By its means adulteration with inferior rubber, rubber substitutes, and recovered rubber could be carried out without possible detection by eye or hand inspection, although chemical analysis or practical use of the rubber would reveal the sophistication. In unprincipled and fraudulent hands such adulteration might be carried to a considerable pitch before detection occurred, and this possibility of misuse should not be lost sight of by those who are responsible for the purity of the rubber produced.

"HEVEA BRASILIENSIS."

SMOKING PLANTATION RUBBER.

THE London rubber brokers, Lewis & Peat, who have from the beginning shown a special interest in the development of the market for plantation rubber, handling an important share of the Ceylon and Straits product, write at length in *The Times of Ceylon* in regard to the proper preparation of this rubber. Their attention has been called to some lots of biscuits apparently well cured, arriving in London in a heated and sticky condition, and the question has arisen as to whether the present mode of curing and the biscuit forms are the best. The firm regard this question of great importance, and they seek to impress upon planters the necessity of doing everything possible to establish plantation rubber on a sound basis as a competitor of the Brazilian smoke cured rubber, which "is still the standard and has maintained its character as the best up to this day, viz., for elasticity, strength, and durability for general purposes."

It is essential, they say, that plantation rubber should be so prepared and cured that it can be used for all sorts and purposes by manufacturers. At present, so far as they can ascertain, it is only used for solution and small special purposes, and is not strong enough nor suitable for waterproofing or tires and many other purposes that fine Pará is used for.

They have noticed sometimes cases arriving with the biscuits sticking together and in some cases actually more or less compacted in one heated mass This they attributed formerly to want of proper curing and drying, but they have been impressed by a theory put forward in the trade "that Ceylon pancakes and Straits sheets are at present made too 'pure'; that is to say, too much moisture, etc., is taken out of the latex, with the result that the elasticity and strength is reduced and that it will be found the rubber in this form will not keep, but will inevitably become soft and treacly if stored for any time or subjected to pressure and a raised temperature."

The author of this theory believes that it is the extra moisture left in the fine Pará smoke cured that renders it fit and strong enough for all purposes and accounts for its not deteriorating. His argument is that Ceylon planters should smoke cure their rubber and make it into large balls as they do in Pará. He also suggests that there are plenty of nuts in Ceylon that when burnt will produce the thick heavy smoke containing the active principle, "creosote," which is the antiseptic which cures Pará rubber in Brazil. It is further suggested that while plantation rubber so cured might fetch less than the Ceylon biscuits and sheets do, the gain in weight in moisture left in the rubber would more than make up for the slightly lower price.

Lewis & Peat remark that they have seen Rangoon and Assam rubber nicely washed and cleaned in India, arrive in London "a mass of heat," and with it other rubber from the same source, prepared by the natives, containing earth and other impurities, but quite sound and free of heat, suggesting that the cleaning weakened and destroyed the fiber of the rubber and thus unfitted it to stand the heat of a ship's hold or variations of the temperature.

The Times of Ceylon, in reproducing Mr. Gordon Waldron's letter in THE INDIA RUBBER WORLD in regard to smoking *Castilloa* rubber in Nicaragua, mentions that Mr. Alexander C. Devitt, a member of Lewis & Peat, who has been visiting Ceylon, inclines to the belief that plantation rubber from *Hevea* may one day be treated by smoke instead of by the methods which usually obtain to-day.

CEYLON AND STRAITS PLANTING.

THE report presented at the yearly meeting of the Ceylon Tea Plantations Co., Limited (London, April 26) mentioned 307,495 rubber trees on the estate, mostly among tea, though the company are now beginning to plant rubber extensively alone. During the year 5596 of the older trees yielded 3685 pounds of rubber, which brought an average of 5*s.* 11*d.* [=$1.44]. Mr. H. K. Rutherford, the chairman, said, as far as he could make out, the prices at which rubber company shares stood, gave roughly an average value of about 10 shillings per tree, of all ages. If this company adopted 5*s.* as a basis, their rubber would be worth £75,000 as an asset.

The Times of Ceylon has been making inquiries in regard to the exports of plantation rubber from the Federated Malay States, and finds that the government has not completed the machinery for supplying exact figures, and it is a difficult matter for private enterprise, owing to the number of seaports from which rubber is shipped, besides which a certain amount crosses the border into adjacent provinces.

Straits Settlements (Bertram) Rubber Co., Limited, has been floated in London, with £175,000 [=$851,637.50] capital, to acquire and develop the valuable Bertram estate, in the province of Wellesley, Straits Settlements, on which the planting of Pará rubber has been begun, and which interest is intended to become the chief dependence of the new company. The directorate embraces members of the boards of several other rubber planting companies, and the chairman is Sir J. West Ridgeway, G. C. M. G., late governor of Ceylon. Secretary and offices: H. Read Smith, F. C. I. S., 16, St. Helens place, E. C., London.

At a meeting of the Sabaragamuwa (Ceylon) Planters Association on September 2 the following acreage of tea interplanted with rubber this season was reported: Rakwana district, 535; Balangoda, 110; Ratnapura 2361; total 3026. The new land opened for rubber this season in the same districts is reported at 2340 acres, and the estimated openings for next season 5300 acres.

COAGULATING RUBBER WITH "KOALATEX."

A FIRM of manufacturing chemists in Hamburg supply THE INDIA RUBBER WORLD with the following details with regard to a compound which they term "Koalatex":

"There exist several methods for the transformation of proto-rubber, which finds itself in each rubber milk, into rubber. Even the best rubber milks do not give good rubbers, if a bad method of preparation or a non practicable coagulator has been used. All rubber milks contain a bigger or smaller proportion of foreign substances, which, partly, may be easily removed. The most trouble is caused by the albuminoid matters which accompany the proto-rubber and, if not carefully removed, cause fermentation, overheating, and a bad smell of the rubber. In fact it is very difficult to remove quantitatively the albuminoid matters, even from *Hevea* rubber milk. Therefore it is necessary to use as coagulators only such chemicals as have a high disinfecting and preserving action. Liquid acids, as sulphuric, hydrochloric, and acetic acid are not practicable for use of plantations, which mostly do not have good communications, and the transportation of these liquid acids is very dangerous and costly. Besides, these acids have nearly not at all any disinfecting or preserving value, and they do not prevent the becoming black of some kinds of rubber, especially after drying. There exist some organic acids which have not only a good coagulating action, but also have the superiority of being efficacious disinfectors and preservators, but their prices are extremely high. Owing to the far seeing examinations and experiments of a highly prominent crude rubber expert, the rubber coagulation problem has been solved by the compound 'Koalatex', which is a good acting coagulator, gives light coloured rubbers, which remain light after being dried. Koalatex prevents must, is easily transportable and safe, and has a low price."

The firm referred to are Lehmann & Voss. It is understood that the price of the compound is about 20 cents per pound.

PLANTATION RUBBER FROM NICARAGUA.

THE Bluefields newspaper, *The American*, notes the shipment from that port, by Mr. John C. Horter, to the Horter Culture Co. (New Orleans), of a fine lot of cultivated rubber, from the "Daytonia" and "Tennessee" plantations. "This rubber," says the newspaper, "according to expert opinion, is to be classed with the best which has been grown here and weighs 1¼ tons. In conversation with Mr. Horter, that gentleman assured us that this is the largest quantity of cultivated rubber in one shipment which has, up to date, been despatched from any Spanish-American port to the United States." The shipment comprised 2500 pounds and was made by the steamer *Imperator*, on April 19.

BETTER CONDITIONS IN SUMATRA.

THE *Pinang Gazette* hears that the government of Netherlands India has decided to abolish the export duty on plantation rubber grown in Sumatra. This, it adds, is sure to further enhance the value of the rubber estates in Netherlands India. The real intention, however, is, says *The Times of Ceylon*, to encourage capital to come into the country; and when Mr. Kelway Bamber, of Ceylon, recently visited Sumatra, he found a marked improvement in the attitude of the authorities towards British investors.

TAPPING RUBBER IN MEXICO.

MEXICAN Plantation Association (Chicago, Illinois) advise THE INDIA RUBBER WORLD that they have on their plantation "Lumija," in the Mexican state of Chiapas, 75,000 rubber trees 6 years old. They will commence tapping this year, on an experimental scale. Their coffee is beginning to be productive, and they have been paying dividends from side crops, together with the profit from the plantation store.

"La Esmalta" plantation, in Oaxaca, owned by the Binghamton Tropical Plantation Co. (Binghamton, New York), a company incorporated in 1902, contains some 1500 planted rubber trees which were standing on the property when purchased. The company report that last year 10 of these trees (from 7 to 10 years old) yielded under experimental tapping in January 11 pounds of dry rubber. This year in the same month the 10 trees yielded 17 pounds of rubber weighed immediately after coagulation, and weighing 15 pounds after 3 or 4 months. One tree, supposed to be 15 years old, is reported to have yielded 2⅞ pounds at a single bleeding.

MEXICAN PLANTATION COMPANY PUBLICATIONS.

OAXACA Rubber Co., New York.=Third Annual Inspector's Report. By George S. Delano and Caleb B. Leach. 8 pages.

Tehuantepec Rubber Culture Co., New York.=Plantation Rubio. Report of Official Inspector W. H. Hyde, 1905. 26 pages.

Chacamas Plantation Co., Chicago.=Report on Method of Rubber Planting on the Chacamas Plantation, State of Chiapas, Mexico. By Charles W. Rickard, plantation manager. 23 pages.

Wisconsin Rubber Co., Madison, Wisconsin.=Report of M. C. Fitzgerald, Second Inspector, Elected January 28, 1906. 24 pages.

The North American Rubber Culture Co., Kansas City, Missouri. =Annual Report of the General Manager, Printed April 1, 1905. 12 pages. Annual Report, 1906. 12 pages.

Conservative Rubber Production Co., San Francisco = Report of G. R. Taylor, of Fresno, California, on the Property Owned by the Company. 16 pages.

Mexican Mutual Planters Co., Chicago.=La Junta; 5000 acres of Forest Jungle now a Cultivated Plantation. 36 pages + map. A Plantation; not a Prospect. 32 pages.

Batavia Co., Minneapolis, Minnesota.=Annual Report No. 3. Batavia Plantation. J. E. Rhodes, Inspector. 1906. 42 pages.

The Obispo Rubber Plantation Co., New York.=Fifth Annual Inspector's Report [by R. M. Johnson] on the Obispo Rubber Plantation and Financial Statement of the Republic Development Co., Contractors. 1906. [With a report on the Pittsburg-Obispo plantation.] 27 pages.

MR. HENRY A. REED AND HIS WORK.

AT a recent meeting of the directors of the Bishop Gutta-Percha Co. (New York), Mr. Henry A. Reed, who had been treasurer of the company since January, 1893, tendered his resignation, and his eldest son, William Boardman Reed, was elected to fill the vacancy. Mr. Reed continues as president and another son, Harry D. Reed, has been elected vice president. Mr. Reed is now in his seventy-eighth year. He has now completed his fifty-seventh year in the electrical interest, and his twenty-seventh year with the Bishop company. A sketch of the retiring treasurer would not be complete without going back a little into the history of the Gutta-percha industry, leading up to Mr. Reed's connection with it.

About 1845 Gutta-percha first became an article of commerce in England, it having been found to be particularly adapted for making water pipes and lining cisterns. It soon attracted the attention of Stephen T. Armstrong, who was a rubber manufacturer at Greenpoint (Long Island), New York, and in 1847 Mr. Armstrong went to England and purchased the patent rights for the United States. Gutta-percha pipe was then cheaper than lead, the market price being about 25 cents a pound, and its specific gravity only one-ninth that of lead, so it soon became widely used for many purposes for which lead had up to then been used, but chiefly as a material for water pipes and cistern linings. It had the advantage over other waterproofing materials in that it was antiseptic.

HENRY A. REED.

In the same year (1847) the Prussian government used Gutta-percha as an insulating material, this being its first use for that purpose. The Prussians laid 1380 miles of telegraphic cables insulated with Gutta-percha and covered with a thin shell of lead. The vulcanization of rubber having been successfully accomplished by Goodyear, it occurred to the Prussian government that Gutta-percha might be treated in the same manner. After a series of experiments the vulcanization was pronounced to be a success. But the process so shortened the life of the Gutta-percha that it was soon abandoned. On October 23, 1858, Samuel C. Bishop, a dealer in rubber goods in Cedar street, New York, bought Mr. Armstrong's business, including the patent rights. In 1861 he moved the factory to East Twenty-fifth street, to the present location of the Bishop Gutta-Percha Co., where he continued the business until his death, on July 4, 1872. Mr. William Willoughby Marks, a nephew of Mr. Armstrong, and who had been superintendent for Mr. Armstrong from the beginning, continued in that capacity and afterward took full charge for Mrs. Bishop, the widow, and continued to run it successfully until her death, in 1881.

Mr. Samuel Boardman, who was executor of Mrs. Bishop's estate, ran the business for the estate until July, 1885, when the present company was formed. The capital stock was divided among the legatees of Mrs. Bishop, with Mr. Boardman as president. The suit of Clinton G. Colgate *v.* the Western Union Telegraph Co. was being fought out in 1878, the plaintiff prosecuting on the ground that the defendant was infringing the Simpson patent for a Gutta-percha insulated cable, which patent had then come into the possession of Colgate.

It was at this time that Mr. Henry A. Reed came into contact with the Gutta-percha interest. He had learned telegraphy as a boy and had long been recognized as an authority in electrical and insulation matters. In 1856 he was the first in America to test for faults by galvanometer, using an instrument made by Henley, of London, and presented to Mr. Reed by Professor S. F. B. Morse. This instrument, by the way, is now in the Smithsonian Institution, at Washington, having a place alongside the Morse collection. The Colgate suit was decided adversely to the Western Union company, who were assessed damages amounting to $100,000.

Mrs. Bishop feared she might be made defendant in suits brought by Colgate, and Mr. Reed was employed to gather evidence for the defense. He made a careful study of the history of insulation up to that time, and especially watched the progress of the case against the Western Union. But the suits feared by Mrs. Bishop never materialized. Mr. Reed advised her tacit acknowledgment of the validity of the Simpson patent. By doing this, and agreeing upon the payment of a 5 per cent. royalty, Mr. Reed secured for Mrs. Bishop the exclusive rights to the patent during its life—a matter of a half dozen years or so.

Upon the organization of the Bishop Gutta-Percha Co., in July, 1885, Mr. Reed was made secretary. He continued his work as an expert until 1887, when he was made manager of the company. In 1893 he was elected treasurer and filled that position until he resigned in April of the present year. He was chosen president of the company in 1905, which position he still holds. The business of the company has outgrown the present factory, and in the near future an additional one will be erected. The new factory will adjoin the present one, and will cover a lot 50 × 100 feet in area and will stand five stories high.

Mr. Reed was born in Carmel, New York, on February 11, 1829. He was teaching school in his native village when he learned telegraphy. He soon became proficient and in 1849 was placed in charge of the telegraph office in Carmel. In March, 1850, he opened, at Croton Falls, the first office of

the Harlem railroad. From there he was sent to Hudson, New York, and afterward opened the offices in Valatie and Red Hook, both in New York state. In 1852 Mr. Reed was an operator in the New York office of the New York, Albany and Buffalo Telegraph Co. A year later he was placed in charge of the Poughkeepsie office of the company, which position he held until 1866.

When Fort Sumter was fired on, April 12, 1861, Mr. Reed received the news in his office in Poughkeepsie. By his side was Admiral Farragut, anxious and expectant. When Mr. Reed told Farragut the contents of the dispatch the admiral remarked, "That means that I must go to Norfolk at once. I have many friends there, but if duty requires, I will blow the city to h—l."

THE SIMPSON INSULATION PATENT.

IN connection with the preceding sketch of Mr. Reed, it may be of interest to say something more in regard to the Simpson patent for the insulation of electric wires with Gutta-percha. In 1849 George B. Simpson applied for a patent for the insulation of wires with glass beads, enclosing the same in an insoluble India-rubber or Gutta-percha case or tube. Finding this process impracticable, he applied for a patent on the use of Gutta-percha applied directly to the wire. This application was rejected by the United States commissioner of patents, on the ground that the use of Gutta-percha for that purpose was already known and had been practiced for some time. Simpson made repeated applications, changing his claims somewhat, but was each time refused. In 1860 he appealed from the decision of the patent office to the supreme court for the District of Columbia, which sustained the decision. Notwithstanding these repeated rejections, Simpson succeeded in getting a bill passed by Congress granting him a patent for 17 years (1867 to 1884), although the process covered had been in practical use for 20 years. In 1877 papers were served upon William Orton, then president of the Western Union Telegraph Co., and an injunction applied for, but the suit was not pressed at that time. On the death of Simpson, his nephew, Clinton G. Colgate, obtained control of the patent and began a new suit against the Western Union company, which was decided in his favor in December, 1878. Suit was then begun against Mrs. Sarah Bishop, the then owner of the Bishop Gutta-Percha Co., for infringement of the patent in making the cables that had been used by the Western Union and other parties. This ended in an arrangement whereby Mrs. Bishop acknowledged the validity of the patent and was granted its exclusive use during the remaining years of its life, on the payment of a royalty.

GOOD RESULTS IN MEXICO.

THE INDIA RUBBER WORLD has seen a letter reporting a visit to the estate of La Zacualpa Rubber Plantation Co., in Mexico, from the manager of another plantation, who says: "The Zacualpa people last year harvested and prepared 15,000 pounds of rubber on their property. Their product was white, clean, and as pretty as could be desired. It was coagulated by the creaming process, which worked infallibly, quickly, and no difficulties were experienced, showing that large quantities of the milk can be handled without danger of complication or loss." It would appear that the energies of La Zacualpa management have been devoted chiefly to the production of rubber in the best shape possible, since this letter states that the manager has not kept a record of the rate of yield per tree, or kept the plantation rubber separate from the product of the wild trees on the estate. Mention is made of a tapping knife in use which gives "extraordinarily satisfactory results." The wound it makes is clean, uniform, of rounded shape, and quick and easy healing. Its efficacious gage prevents the incision from penetrating the wood of the tree, and the latex flows down the gash made without a drop running over the bark. The letter continues: "While at La Zacualpa we demonstrated beyond doubt that tapping from day to day is impossible on the *Castilloa*, that same can be tapped with favorable results every three or four months, that it is not practicable to tap during the dry season, the production being very small at such times, that the entire trunk of the tree and its large branches can be milked through tappings 2 feet apart without injury to the tree, and that the task of tapping and harvesting of rubber milk is destined to be easy and simple."

NEW PROCESS FOR GUAYULE.

THE invention of Antonio Villalba de la Corte, of San Luis Potosi, Mexico, covered by United States patent No. 814,675 (March 13, 1906), relates to the extraction of rubber from the Guayule or other like plants by a "process consisting in breaking the wood to be treated into suitable size, subjecting this material to successively finer dry grindings, and during the final grinding to pressure and heat." The apparatus described in the patent specification comprises a hopper for receiving the broken bits of wood, and a series of four grinding cylinders, through which the material successively passes. The final cylinder is provided with a steam jacket to raise the temperature of the ground wood, so that the rubber becomes soft or plastic, and readily agglomerates, and on leaving this cylinder "the wood has been so thoroughly ground that the agglomerated rubber is in a condition to be readily separated therefrom by hand, or the rubber may be cleaned or freed from impurities by suitable washing or cleaning devices."

* * *

THE *Mexican Herald* reports a movement to organize a company to develop the Guayule interest in western Texas, where the rubber shrub is said to be abundant. C. G. Woodruff, of New York, is mentioned as forming a syndicate to establish a Guayule factory at Del Rio, Texas, his interest having been enlisted by Judge J. G. Griner (connected with the Southern Pacific railway) and J. J. Foster, two citizens of Del Rio.

The *Mexican Herald* reports the purchase, by the Continental-Mexican Rubber Co.—the large concern in which several New York capitalists are reported to be interested—of a Mexican patent issued in 1901, covering a process for extracting rubber from Guayule and other plants. It is intimated that some other companies now at work will be proceeded against for infringement. The patent was purchased from Constancio de la Garza, Reuben Zertucbe, and Miss Sue Greenleaf. The latter is reported to hold extensive interests in Guayule lands. "She is also the half owner of a rubber working machine patented in the United States and will soon go to New York to negotiate for its sale."

ENGLISH GOLF BALLS BARRED IN AMERICA.

IF you play golf with a ball made in England you are liable to arrest, says the New York *Sun*. Over there unless the lower court and chancery divisions are reversed on the appeal pending in the House of Lords, the rubber cored golf balls controlled by the patentee and his licensees in the United States may now be manufactured by any one. As a consequence, there is a flood of home manufactured rubber cored balls on sale in England, and some specimens have been brought to America by tourists, while other players have had a box or two as a gift from friends abroad. The American makers cannot prevent the balls coming here in these underhand ways, but they propose to get after the players who may use them.

Priority of invention is the point that the American patentee [meaning Haskell] has so far been unable to establish in the English courts. In this country all other makers of rubber core balls pay a royalty to the patentee's firm and should the House of Lords sustain the American patent, which the lower courts have not done, makers of rubber core balls the world over would have to pay a similar royalty. In England the manufacturers act as though they had already proved their contentions fully and the output is being sent into the home and colonial markets at a great pace. The retail price in England will average, according to the advertisements, $5 a dozen. The American price will average $6 a dozen, and, as in spite of the duty there might be a profit in sending the balls here, there is a special interest in having the English balls declared from the outset contraband of trade.

"We can't reach the makers or the underhand consignors of these balls made in contempt of the American patent," declared a leader in the New York trade, "but we can get after the individuals who openly play with them. We will stop by legal means, and very quickly, the golfer who openly uses an English golf ball, or any golf ball made in defiance of our rights on an American course."

The situation is very different from what it was when golf first attained popularity here in 1895. Then the golf balls were all imported from England, but there were no restrictions on the manufacture of the solid gutta-percha ball, and American firms soon jumped into the trade. By 1900, when the patentee first began selling broadcast the rubber core ball, the greater proportion of the solid balls used here were of American manufacture. Various sorts of rubber core balls followed the first on the market, until in 1903 the patentee brought suit against all other makers for infringement of his patents and cumulative damages. The two principal defendants confessed judgment, and since then all makers of golf balls having a core of wound rubber have paid a royalty.

In England the new American ball received a patent right in 1898, and although the firms and the professionals made a stand against it the fight was as futile as that of the old feather ball makers against the first solid gutta-percha balls. By 1901 the new ball had revolutionized the demand for golf balls in England, and the rubber core became the admitted ideal in such articles, so that all theories of playing the game, laying out courses and placing the hazards, based on a solid and slow ball, were also revolutionized. The English trade was naturally averse to conceding a monopoly to the American patentee and has waged a bitter fight in the law courts.

The combination of elasticity and inelasticity of the American patent has been the aim of many makers of golf balls in Scotland and England, according to the evidence brought forward, and Justice Buckley, in the chancery division, seemed to have been convinced that two of the Scottish inventors at least had forestalled the American patent in principle without making the ball a commercial or even a playing success. He decided that the lack of novelty in the American patent destroyed the claim to be granted an undisturbed possession of the right to make such balls.

What is supposed to have most influenced the Justice was that Captain Duncan Stewart, R. N., deposed that in the early '70s he made golf balls, sold them and gave them away, in the composition of which only rubber threads were used in the core, and that two professionals, George and William Fernie, stated that they had made similar rubber core balls and that a patent had been taken out for them, although they were never brought to the practicable point reached by the American balls. Justice Buckley's decision was made last July, and in March it was sustained by the court of appeals. These judges relied on Captain Stewart's testimony, not attaching much weight to the Fernie evidence.

Whether the rubber core golf balls now in this country from England are better or worse than those being made here has nothing to do with the attitude of the American makers. Whether the House of Lords sustains the English patent or not, they do not propose to let the English balls into this market without a litigation, and the golfer who is in possession of any such balls had better watch out unless he is yearning for a law suit.

"The course to be pursued," remarked a lawyer who is a golfer, "would be to serve an injunction on the player who is using the obnoxious ball. A temporary injunction might be asked for from the court, and unless the player demonstrated his legal right to use the ball the injunction would then be made a permanent one. There could be no arrest in the first instance but if the injunction were granted and subsequently violated there might be cause for a criminal action.

"It is good law, I believe, that an American patent must be protected from encroachments on the American market of articles made in violation of that patent in other countries. But in general law, to speak offhand on the point, it may not be easy to obtain a permanent injunction against a golfer who may prefer to use a golf ball made in England and which is not on sale in this country. The golfer may prove to the court that in England it has been decided it is lawful to make and vend the golf ball he is using. Law is largely a matter of precedents, and, on the principle of *res adjudicata*, an American Judge might follow the English court decision and refuse to enjoin the golfer from using the foreign made ball."

A permanent injunction against one player would become general in its application to similar cases, and, according to one golf goods dealer, should the American patent be beaten in the House of Lords, the way the English dealers will get their cause before the American courts will be in defending an injunction suit of the sort mentioned. They feel chipper over there, he says, on the question of priority of invention, and beginning with an injunction defence will push the case all the way up for a final verdict by the supreme court at Washington. Meanwhile should a friend get some of the English golf balls to you it would be wise not to proclaim the fact from the clubhouse roof.

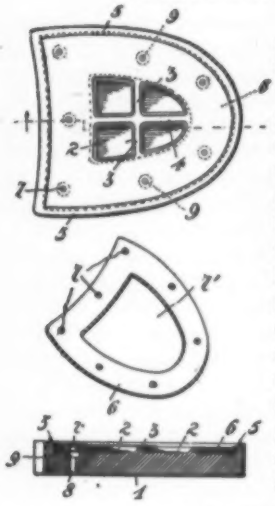
NEW GOODS AND SPECIALTIES IN RUBBER.

"LIFE PRESERVER" TIRE TREADS.

A DETACHABLE tire tread whose function is to preserve and increase the longevity of the tire is an Ohio producti n that appears to have much meri . It is molded so as to conform to the shape of the tire, and is made of one piece of tough rubber reinforced by a special weave of canvas.

Slipped on over the deflated tire, it is firmly held in place by means of a steel cable which passes through a series of brass or nickel hooks attached to the edges of the protector. The cable is tightened with a turnbuckle and cannot work loose. It is claimed that this detachable tread is indestructible and skid proof, and that while it is in use a tire puncture is an impossibility. The protector would thus seem to be a; tly called the "Life Preserver." [The Pneumatic Tire Protector Co., Dayton, Ohio.]

RUBBER HEEL ATTACHED TO LEATHER.



THE accompanying sketches relate to a newly patented rubber heel, the foundation of which is a metal plate, which is coated with unvulcanized rubber and then vulcanized into the body of the heel. The flanged edge at the side of the heel secures a firm joint with the leather. The cavity in the middle of the heel is provided for the purpose of increasing its resilience. The cavity may be made with cross ribs, as shown in the uppermost drawing. The heel is patented by Charles Yahrus and F. A. Hammer, of Woonsocket, Rhode Island.

AN "AUTOMOBILE" SKATE.

INDICATIONS point to the return of the roller skate to a large measure of the popularity it enjoyed nearly a generation ago, when the larger cities were fairly peppered with rinks, and every small town had at least one of those centers of pleasure. The fad was widespread and for a season held the country in its grasp. Its reign was brief, however, and in a remarkably short time roller skating became an almost forgotten pastime. In the present revival of roller skating rubber plays an important part; in fact the introduction of a new type of rubber wheeled skate may be said to be responsible for it. The newest roller skate is called an "automobile" or pneumatic. That is because two inflated rubber tired wheels, with ball bearings, take the place of the four solid wood wheels, of the old type of skate. As will be seen by the illustration, the body of the skate lies below the axles, thus doing away with the old time top-heaviness. The rubber tires are of two types—pneumatic and cushion. They are held in place by substantial inner lugs, which are a part of the tire itself, screws with nut fastenings passing through the lugs and clamping the steel spokes and tires in one solid wheel, which runs on steel ball bearings. The metal parts are polished and nickeled. It is claimed for this skate that it overcomes the tendency to fall backward, and that both wheels are always on the floor. The skate has a length of from 10 to 12 inches, the varying length being obtained by means of a telescoping steel tubing which forms the main structure, or keel. The wheels also are variable, being from 4 to 5 inches in diameter. [Cycle Skate and Sporting Goods Co., New York.]

A PRACTICAL TIRE SHOE MENDER.

THE Shaw Gaiter is a device which seems bound to find a place in most automobile repair kits. There are strong reasons for this. First and most important, is the fact that it does what is claimed for it —repairs tire punctures and blow-outs quickly and effectually. Of course the mending is only temporary, but it answers the purpose for the time being and enables the stranded motorist to get home or to some shop where the damage may be repaired in a more lasting manner. The gaiter is of leather, with stout, securely fastened leather tread, and when adjusted completely envelops the tire for a space corresponding with its own length It is secured to the rim with stout leather lacings. It is made in lengths varying from six to sixteen inches, and in sizes to fit any tire from the motorcycle to the largest automobile. [The Shaw Motor Tyre Tread Co., Birmingham, England.]

SOMETHING NEW IN OVERSHOES.

SOMETHING new in footwear is the Stazon, a rubber overshoe which is made on a last that has as its distinctive feature an exaggerated curve. The object of this peculiar shape is to prevent the annoyance which is so frequently caused when walking by the slipping of the ordinary overshoe. Furthermore, the Stazon is guaranteed not to come off until it is taken off. The style also commends itself to

the well dressed man or woman, its appearance certainly approaching the artistic. For men it is made in W. Royal, W. Oxford, F. Oxford, and W. New York, and for women, in F. Royal, F. New York, and F. Beauty. [The Merchants Rubber Co., Limited, Berlin, Canada.]

THE "SOMNOFORME" INHALER.

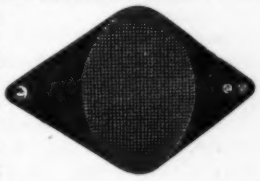
THE use of anæsthetics, beginning in the latter part of the American civil war, has become one of the greatest blessings of the modern world. That it has been abused, there can be no doubt, and its victims are many. Death is so near, that an overdose means no awakening, and an underdose may mean a struggle ending in death. The Somnoforme Inhaler, a new device, is intended to regulate exactly the amount of gas to be administered to the patient. This Inhaler consists of a pneumatic rubber facepiece, covering mouth and nose, a celluloid cone, a lint chamber, and a rubber air bag, holding two gallons. The liquid Somnoforme is introduced into the lint chamber in a hermetically sealed glass capsule, where it is broken. The air in the bag is inhaled through the saturated lint, sleep being produced in about a half minute. The air bag is readily reversible, which is a new and important feature. It can thus be more easily rendered aseptic, and it should be turned inside out for each operation. The bag is very soft, and can be wadded up until the whole inhaler will go into an ordinary coat pocket—a very considerable advantage. The bag which hangs from the metal part of the inhaler, and also the part which fits over the face, are both made of rubber. [E. de Trey & Sons, No. 28 South Fortieth street, Philadelphia.]

TO PRESERVE TIRE VALVE TUBING.

IT has always been a difficult thing to prevent "heating," and consequent deterioration of rubber tubing for tire valves when kept in stock. A German house has devised a means for remedying this condition, so that the tubing may be kept indefinitely, with the certainty that it will be as good when taken from the package as it was when it was received at the store. This is accomplished by the use of a specially devised tin box, with perforated sides. The perforations permit the free circulation of air at all times, so that "heating" is only remotely possible. The manufacturers guarantee valve tubing packed in these boxes for one year. It will be understood, of course, that, owing to the difference in curing processes used, this device will not be everywhere equally applicable. [Vereinigte Berlin-Frankfurter Gummiwaren-Fabriken, Berlin, Germany.]

CANTON BATH AND BEAUTY BRUSH.

THE brush shown in the illustration is made in one piece, and buttons over the hand, thus forming a "mitten." On this account they are as pliable and convenient as a cloth or sponge, and have the additional merit of being readily cleaned, and consequently are perfectly sanitary. They are sufficiently firm to do their work well, and yet flexible enough to prevent irritation of the skin. They are made of high grade materials and are not to be confused with cheap and inferior brushes. The bath brush is 6 × 6 inches, and is slightly stiffer than the beauty brush, which is 5 × 5 inches. [Canton Rubber Co., Canton, Ohio.]



SINK DRAIN MAT.

A RUBBER sink drain mat is one of the aids to dishwashing which has recently been devised, and it is proving eminently practical and satisfactory. Its superiority over the ordinary drain can be easily detected from various standpoints, but ts special recommendation lies in the fact that its use removes the danger of chipped dishes—the housekeepers' pet abomination. From a sanitary point of view it leaves little to be desired, a raised edge being so placed that the water cannot get beneath the mat, although the corrugated back provides air chambers that insure c'eanliness. [C. W. Joslin, who is in charge of mat department of the Cleveland Rubber Works of the Mechanical Rubber Co., Clevela d, Ohio, is the inventor.]

A KNEADED RUBBER ERASER.

THE already almost endless variety of rubber erasers has been added to by the production of one that fills a field peculiar to itself. It is almost square in shape and is made of very soft, kneaded rubber. While this little device will perform all the offices of the ordinary pencil eraser, its special purpose is to erase unusually black and "soft" marks, such as those made with charcoal. This new eraser is known as the "No 1222," and is made by the firm of Eberhard Faber, No. 545 Pearl street, New York.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED MARCH 27, 1906.

NO. 815,990. Hose coupling. W. B. Ward, assignor of one-half to W. C. Ferguson, both of Richmond, Ind.

815,995. Hose coupling. J. Williamson and H. O'Brien, Chicago.

816,006. Tire valve. C. E. Duryea, Reading, Pa.

816,013. Storm shield for vehicles. M. R. Hull, assignor to The Rex Buggy Co., Connersville, Ind.

816,029. Hose coupling. [For air brake hose.] J. F. McElroy, assignor to Consolidated Car Heating Co., both of Albany, N. Y.

816,106. Inflatable toy. C. A. Lindsay, New York city.

816,182. Tire armor. H. E. Prouty, Genoa, Ill.

816,225. Tire. [Cushion type.] C. W. Faitoute, Summit, N. J.

816,312. Hose coupling. E. E. Gold, New York city.

816,314. Fountain pen. W. N. Lancaster, Baltimore, Md.

816,345. Fountain pen filling device. R. G. Lockwood, Boston, assignor to Davidson Rubber Co.

816,354 Vehicle tire tool. C. McCarthy and M. M Phenice, Columbus, Ohio.

816,503. Stopper for hot water bags. G. H. F. Schrader, Greenburg, N. Y., assignor to A. Schrader's Son, Inc., New York city.

Trade Marks.

11,569 Horseshoes and calks. The Neverslip Mfg. Co., New Brunswick, N. J. *Essential feature.*—The word NE ERSLIP.

15,383. Insulating tape Massachusetts Chemical Co, Walpole, Mass. *Essential feature.*—The word DRYFIELD.

ISSUED APRIL 3, 1906.

816,583. Milking machine. D. Klein, West Chester, Pa., assignor of one third to Mary E. Bowman, Salem, Va.

816,596. Coupling for internally and externally armored hose. N. Perzoff, St. Petersburg, Russia.

816,604. Shower bath. C. C Russell, Cleveland, Ohio.

816,656. Atomizer. I. Q. Gurnee, Butler, N. J., assignor to The American Hard Rubber Co.

816,703. Hose coupling. C. E. Bewley assignor of one-half to J. C. Bewley, both of Los Angeles, Cal.

816,761. Pneumatic horse collar. I. J. Thomsen, Minden, Neb.

816,856. Plug [for sinks, wash bowls, and the like]. M. W. Gartshore and J. H. Foster, assignor to Parish & Bingham Co., both of Cleveland, Ohio.

816,884. Detachable pneumatic tire. C. S. Scott, Cadiz, Ohio, assignor, by mesne assignments, to The Goodyear Tire and Rubber Co.

816 889. Flexible tire. A. V. Stichelen, Gand, Belgium.

816,924. Bath spray. A. N. Lattin, New York city, assignor to S. Sternau & Co.

817,019. Elastic woven fabric. H. T. Sykes, London, England.

817,020. Apparel pad [for the bosom]. H. W. Thompson, Pitman Grove, N. J.

817,054. Syringe. D. G. Gay, assignor of one half to James W. Lynd, both of Freewater, Oreg.

817,058. Coupling for armored hose. E. T. Greenfield, Monticello, N. Y.

817,059. Flexible tube. *Same.*

817,060. Hose. *Same.*

817,066. Pneumatic tire. S. Hunter, St. Louis.

817,075. Combined helmet and face protector. S. J. Lavis, Bowmanville, Canada.

817,079. Striped rubber tubing. J. L Mahoney, assignor of one half to F. F. Schaffer, both of Naugatuck, Conn.

Trade Marks.

6,326. Nipples for nursing bottles. The Seamless Rubber Co., New Haven, Conn. *Essential feature.*—The letters A A A arranged side by side and inclosed by an oval band, at each end of which is a horizontal band, all inclosed within a diamond.

12,864. Dental rubber. The S. S. White Dental Mfg. Co., Philadelphia. *Essential feature.*—The word BOW-SPRING.

12,865. Gutta-percha tooth filling. *Same. Essential feature.*—The word PREMIUM.

12,866. Gutta-percha tooth filling. *Same. Essential feature.*—The word EXCELSIOR.

15,326. Rubber packing. Gibbens & Stream, New Orleans. *Essential feature.*—The letters A L L A.

15,933 Rubber water bottle, rubber fountain syringe bags, rubber ice caps, and rubber invalid rings. The Faultless Rubber Co., Akron, Ohio. *Essential feature.*—The word WEAREV R.

17,260. Fabric hose Eureka Fire Hose Co., Jersey City, New Jersey. *Essential feature.*—Parallel longitudinal lines of red, white, and blue colors in the order named and produced upon a piece of woven fabric hose.

17,261. Fabric hose. *Same. Essential feature.*—Red, white, and blue lines running longitudinally upon the exterior of the hose, composed of two broken red lines formed by warps of that color incorporated in the fabric and one broken blue line formed in a similar way intermediate between the two red lines and separated therefrom by narrow intervals of the body fabric which form the white lines.

ISSUED APRIL 10, 1906.

817,208. Preserving apparatus T. Widdop, Lonetree, Wyo.

817,231. Coin controlled atomizer. P A. Dunn, Green Island, N. Y.

817,235. Spring wheel with pneumatic cushion. D. Farrand, Newark, N. J.

817,323 Horseshoe. G. W. Johnson, Chicago.

817,355. Rubber heel for boots and shoes. C. Yahraus and F. A. Hammer, Woonsocket, R. I.

817,560. Tire for vehicle wheels J. L. Heward, Cardiff, England.

817,584. Detachable calk for rubber pad horseshoes. T. W. J. McGann, assignor of one-half to A. Collins, both of Washington, D. C.

817,668. Tire. J. C. Raymond, New York city.

817,703. Apparatus for moving invalids. Louisa Garaghty, Chester, Pa.

Trade Marks.

13,618. Carpet sweepers. The American Wringer Co., New York city. *Essential feature.*—The word ECLIPSE.

13,619. Wringing machines. *Same. Essential feature.*—The word NEW HOME.

13 625. Clothes wringers and the parts composing the same. *Same. Essential feature.* The word VICTOR.

13 626. Clothes wringers and the parts composing the same. *Same. Essential feature.*—The word FALCON.

13,628. Clothes wringers and parts thereof. *Same. Essential feature.*—The word CRESCENT.

13,629. Clothes wringers and the parts composing the same. *Same. Essential feature.*—The word CONQUEROR.

13,630. Clothes wringers. *Same. Essential feature.*—The word MAGIC.

13,631. Clothes wringers. *Same. Essential feature.*—The word RELIEF.

13,632. Clothes wringers. *Same. Essential feature.*—The word BANNER.

13,634. Clothes wringers. *Same. Essential feature.*—The word RIVAL.

13,635. Clothes wringers. *Same. Essential feature.*—The word IMPERIAL.

13,636. Clothes wringers. *Same. Essential feature.*—The word LEADER.

13,637. Clothes wringers. *Same. Essential feature.*—The word GARLAND.

15,266. Packing for the wearing and bearing parts of machines and mechanical devices. Greene, Tweed & Co., New York city. *Essential feature.*—The word PALMETTO.

ISSUED APRIL 17, 1906.

817,787. Vehicle wheel [with rubber tire]. F. J. Lancaster, New York city.

817,818. Hose coupling or connector [in combination with a faucet]. J. J. Tredtin and F. H. Grosbernt, Dayton, Ohio.

817,838. Eraser. E. G. Dann, Chicago.

817,957. Vehicle tire. [Solid.] W. Christy, Akron, Ohio.

817,961. Dress shield. Emilie P. Davis, New York city.

817,977. Ice creeper [for wearing on a shoe]. O. F. Leibert, Bethlehem, Pa.

818,023. Rod packing. O. J. Garlock, Palmyra, N. Y.

818,050. Playing ball [for golf and the like]. H. Ritchie, Peterboro, Canada.

818,052. Fountain pen. W. R. Rothwell, West Philadelphia, assignor to E. M. Vasey, Philadelphia.

818,173. Antislipping removable sole for shoes. J. M. Hoffman, assignor of one-half to J. F. Nelson both of Brooklyn, N. Y.

818,184. Tire. [Cushion.] C. Miller, Binghamton, N. Y.

818,198. Vehicle wheel [with rubber tire of sectional construction]. J. C. Schleicher, Mount Vernon, N. Y.

818,321. Pneumatic mattress, cushion, &c. R. A. Whall, assignor of one-half to Metropolitan Air Goods Co., both of Reading, Mass.

818,400. Vehicle tire. R. Wright, Cleveland, Ohio.

Trade Marks.

10,372. Insulated wire and adhesive tapes commonly used for insulating. New York Insulated Wire Co. *Essential feature.*—A raven perched within a border representing a coil of wire. A ribbon is held by the beak of the raven, together with the words RAVEN CORE WIRE.

13,623. Clothes wringers. The American Wringer Co., New York city. *Essential feature.*—The word ELECTRIC.

13,627. Wringers. *Same. Essential feature.*—The word STAR.

ISSUED APRIL 24, 1906.

818,402. Pneumatic tire plug. D. Apstein, Bridgeport, Conn.

818,432. Rod packing. O. J. Garlock, Palmyra, N. Y.

818,568. Tire for vehicles. E. B. Sims, Western, Neb.

818,618. Massage apparatus. G. B. Fraley, assignor to The Electric Thermo-Vibra Co., both of Philadelphia.

819,649. Pneumatic color applying apparatus. F. Wolf, New York city.

818,771. Tire for wheels. H. Maerker, Wiesbaden, Germany.

818,776. Sand blast apparatus. J. D. Murray, San Francisco.

818,814. Vaginal syringe. M. L. Bosworth, assignor of one half to E. J. Brownell, both of Bristol, R. I.

818,842. Articulation of dolls. H. W. Meier, Baltimore. Md.

818,863. Tire. I. S. Bowen, Lead, S. D.

818,938. Sprinkler. C. A. Crane, Warren. Ohio.

818,989. Swinging hose rack. R. D. Wirt, Philadelphia.

818,990. Hose reel. R. D. Wirt and C. R. Parker, Philadelphia.

819,016. Elastic tread horseshoe. A. W. Jones, St. Louis

Trade Marks.

3,663. Dress shields. I. B. Kleinert Rubber Co., New York city, *Essential feature* —The word ONANDOFF.

4,487. Piston rod and valve packing. The Garlock Packing Co., Palmyra, N. Y. *Essential feature.*—A diamond-shaped figure with the word GARLOCK inclosed therein.

8,249. India-rubber or Gutta-percha tobacco pouches. Adolph Frankau & Co., Ltd., London, England. *Essential feature.*—The designation DIANA.

15,012. Rubber packing, rubber gaskets, rubber disks, rubber rings, and rubber washers. A. B. Jenkins, New York city. *Essential feature.*—The arbitrary word JENKINS.

15,018. Rubber packing, rubber gaskets rubber disks, rubber rings and rubber washers. *Same. Essential feature.*—The word JENKINS inclosed within a diamond space or border.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1904.

* *Denotes Patents for American Inventions.*

[ABSTRACTED IN THE OFFICIAL JOURNAL, APRIL 4, 1906.]

27,065 (1904). Pneumatic tire. [To prevent puncture and slipping metallic studs are embedded in cushions of rubber fitted in recesses in the tread portion of the cover.] G. E. Heyl-Dia, London.

27,086 (1904). Pneumatic tire. [To prevent bursting, puncturing and slipping the tire cover is vulcanized to a leather casing.] W. P. Thompson, Middlesex. (J. Albers, Aachen, Germany.)

*27,186 (1904). Percussive drill with flexible tube connection. H. H. Lake, Middlesex. (Ingersoll Sergeant Drill Co., New York.)

27,190 (1904). Pneumatic tire. [The air tube is protected by a metallic band attached to the rim to retain the tube in position.] J. Russell, Newcastle-on-Tyne.

27,345 (1904). Pneumatic tire. W. B. Hartridge, London.

27,450 (1904). Exercising apparatus for the lungs. G. M. Thomson, London.

27,463 (1904). Sole and heel protector. A. T. Woodhead, London.

27,469 (1904). Elastic tire. [A series of curved plungers, fitted with rubber blocks, adapted to work against springs in curved guides on the rim.] T. Parker, Great Canfield, Essex.

27,489 (1904) Heel protector. [A circular non-slipping protector consists of a brass casing dished to form a resilient support for three rings made of rubber.] J. G. Stidder, Kilburn, Middlesex.

27 555 (1904). Patching strip for tire punctures H. Guest, Sheffield.

27,603 (1904). Vulcanizing apparatus for repairing tires. H. H. Frost, London.

27,631 (1904). Pneumatic tire cover. P. Magnus, Victoria, Australia.

*27,722 (1904). Apparatus for separating gum from Guayule and other rubber plants. F. Ephraim, San Francisco, California.

[ABSTRACTED IN THE OFFICIAL JOURNAL, APRIL 11, 1906.]

27,745 (1904). Means for securing a rubber stopper to the neck of a bottle. J. Wernitz, Odessa, Russia

27 823 (1904). Sole protector. [The resiliency of the sole is increased by fitting it with strips of rubber having semi circular projecting ribs.] O. Gross and E. Gross, Greenwich, Kent.

27,934 (1904). Exercising apparatus. [A hand grip made of cork, having an elastic band fastened to their ends by means of metal mountings.] J. Wolffe, Maida Vale.

27,947 (1904). Means for attaching rubber tires to rims. J. I. Mitchell, Glasgow.

27,995 (1904). Means for attaching rubber tires to rims. G. C. Marks, London. (A Booker, Bruges, Belgium.)

27,997 (1904). Tire. [Fabrics are woven with threads composed partly of asbestos, linen, cotton, and artificial hair. The fabric is used as a puncture preventing lining embedded into the rubber of the cover while it is in a plastic condition.] L. Azulay, Southwick, Sussex.

28,026 (1904). Elastic tire. A. A. Gilles, Nogent sur Marne, France.

28,051 (1904). Method of extracting rubber [from the Mexican shrub known as Guayule, by comminuting it and heating with an alkaline solution.] M. Marx, Heidelberg, Germany.

28,053 (1904). Exercising apparatus. G. Müller, Berlin.

28,158 (1904). Inflatable life belt. A. Gareis and E. Gareis, Vienna.

* 28,219 (1904). Dental syringe F. A. Higgins, Bellevue, Ohio.

28,293 (1904). Toy. [Spinning tops are protected from damage by rings of rubber.] G. Philippart, Paris.

* 28,294 (1904). Method of reclaiming rubber. L. T. Petersen, Akron, Ohio.

* 28,314 (1904). Device for protecting pneumatic tires when out of use. F. E. Bowers, New Haven, Connecticut.

* 28,315 (1904). Tire. [Outer covers of pneumatic tires, hose and other flexible pipes are constructed of layers of fabric arranged so that the layer with the greatest degree of elasticity is innermost.] A. H. Marks, Akron, Ohio.

28,352 (1904). Puncture closing composition for tires. J. J. Collet, Paris.

[ABSTRACTED IN THE OFFICIAL JOURNAL, APRIL 19, 1906.]

28,503 (1904). Pneumatic tire. A. H. Bancroft, Church, Lancashire.

*28,579 (1904). Means for attaching pneumatic tire covers to rims. H. A. Palmer, Erie, Pennsylvania.

28,648 (1904). Pneumatic tire. [A balata band of dovetailed section is secured in the groove in the tread.] J. McConechy, Glasgow.

28,690 (1904). Pneumatic tire. [To prevent skidding a wedge shaped tread having a flexible neck is formed on the cover.] T. W. Maddox, Birmingham.

28,743 (1904). Hose coupling. A. E. Stove, London

28,743 A (1904). Hose coupling. *Same.*

28,819 (1904). Respirator. W. J. Keymer, London. (R. G. C. Baldrey, Coimbatore, Madras, India.)

*28 821 (1904). Elastic tire. J. R. Hill, Washington, D. C.

28,854 (1904). Cover for pneumatic tire [made by winding a strip of rubber fabric helically around two rings]. H. W. Cave-Browne, London.

28,872 (1904). Pump for inflating tires. G. Hagendorf, Brandenburg, Prussia.

28,982 (1904). Means for attaching rubber heels to boots. R. W. Barker, London. (J. Grün, Budapest, Hungary.)

29,030 (1904). Finger stall [for protecting the finger in writing]. C. W. T. Davies, West Ealing, Middlesex.

[ABSTRACTED IN THE OFFICIAL JOURNAL, APRIL, 25, 1906.]

29,080 (1904). Pneumatic tire. R. Dalmer, London.

29,107 (1904). Telephonic apparatus for diving purposes. R H. Davis, and A. Graham, Surrey.

29,114 (1904). Diving apparatus. H. H. Lake, Middlesex. (G. Restucci, Naples, Italy.)

*29,154 (1904). Medical appliance having a flexible blub. F. Hoffman, New York.

*29,155 (1904). Pneumatic tire [with a central core of fabric interposed between layers of rubber]. P. W. Litchfield, Akron, Ohio.

29,192 (1904). Collapsible bath. A. Grosbois, Paris.

*29,286 (1904). Pneumatic tire. O. Imray, London. (H. A. Palmer, Erie, Pennsylvania.)

*29,396 (1904). Golf ball [covered by winding a Gutta-percha strip around the core, the object being to produce a cover without a seam]. H. H. Lake, Middlesex. (Perfect Golf Ball Co., New York.)

29,523 (1904). Elastic tire. J. Wilson, West Croydon, Surrey.

29,580 (1904). Method cleaning hose pipes. Boake, Roberts & Co., Stratford, and A. Berry, Forest Gate, Essex.

29,614 (1904). Nozzle [for connecting a rubber hose to a tap]. W. J. George, Birmingham.

29,640 (1904). Tire tread of leather. T. Mitchell, Bingley, Yorkshire

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION.)

358,361 (Oct. 9, 1905). O. Patin. Elastic core for cushion tires.

358,367 (Oct. 9). Gregaud. Skid tread.

358,436 (Oct. 11). E Sloper. Improvements in pneumatic tires.

358,471 (Oct. 13). P. Baranton. Pneumatic tire filled with system of multiple air tubes.

358,493 (Oct. 4). A. F. Michot. Metallic pneumatic tire.

358,516 (Oct. 14). Fleming & Co. Patch buttons for tire tubes.

358,524 (Oct. 14). Granjon & Berchet. Skid treads.

358,609 (Oct. 17). Walker & Jacobson. Shock absorber.

358,635 (Oct. 18). Körner. Rubber reclaiming.

358,639 (Oct. 18). Caen. Spring wheel.

358 697 (Oct. 20). J. B. Robinson. Vulcanizing together the ends of inner tubes.

358,717 (Oct. 23). Société Mouilbau, Fayand & Co. Improvements in strap making.

358,789 (Oct. 24). Sanlay. Spring wheel.

358,812 (Oct. 24). J. C. Bunge. Tire protector.

358,824 (Oct. 25). Société des usines Rousselot & Videcoq réunies Skid tread.

358,963 (Oct. 28). Chaboche. Anti-skid wheel.

358,978 (Oct. 30). E. Midgley. Elastic tire.

358,996 (Oct. 26). J. Lelong. Punctureproof tread.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieue-Counseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

EDITORIAL AMENITIES IN VERMONT.—Addison county automobilists can get their tires pumped full of hot air free of charge by stopping at *The Register* office in Middlebury.—*St. Albans Messenger.*

A CARD FROM MR. HEYL-DIA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I note in your last issue a reference to my synthetic rubber, which contains remarks made by someone in England. I should like to state once and for all that the rubber made according to my process and master patent represents the production of chemically constituted rubber from substances which are hydrocarbons.

The materials used contain, of course, a very considerable quantity of hydrocarbons, which I have been able to convert into rubber at the present time, and which is the cause of the synthetic or "Yucutan" rubber—as I have called it—ranging as to its commercial value with Borneo No. 1, or other crude rubbers of the value of 95 cents, present market prices, washed and cleaned.

Your correspondent's statement that Pará rubber is produced at a shilling a pound is not expressed by the present market price of Pará, nor is it expressed by the market price of other rubbers not coming from Pará. If your correspondent would be kind enough to furnish me with a million tons of Pará at a shilling a pound, I am sure that I could dispose of this quantity at a very handsome profit.

Against Gutta-percha as a mixture, my material is entirely based upon chemical action, and I make the statement, without fear of contradiction, that it is impossible by any known chemical means to reconstruct the materials used in the production of "Yucutan" rubber. I should be glad if you will publish this in reply to your correspondent's remarks, and remain, Yours faithfully.

G. E. HEYL-DIA, Consulting Expert.

New York, May 8, 1906.

RUBBER DOORS FOR GAMBLING HOUSES.

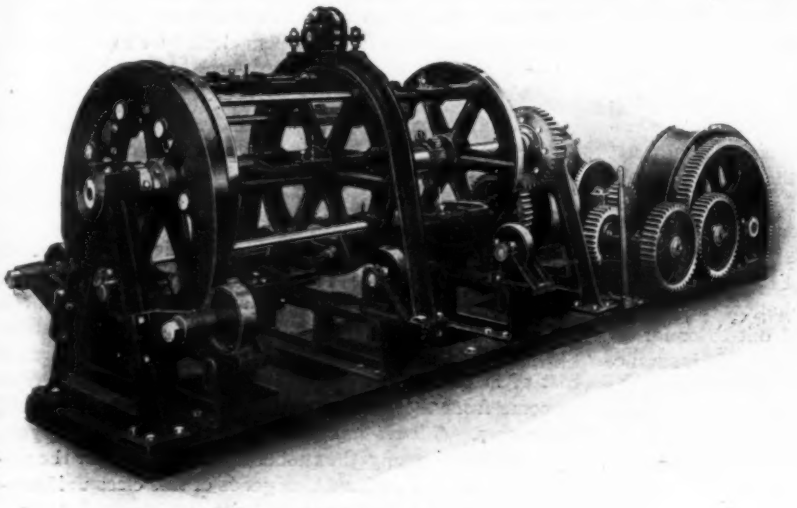
THE police of New York are accustomed to trouble in entering gambling houses, "pool rooms," and the like, through having to break down heavy doors of wood and iron. According to the New York *World*, the lot of the policeman has been rendered harder through the addition to such doors of a 4 inch thickness of solid rubber, so that when the police axes and sledge hammers strike the door they rebound.

"I was knocked clean off my feet the first time I struck one of the rubber doors," said a detective. "The force of my blow striking the sheet iron, wood, and rubber drove me back at least five feet."

These peculiar doors cost sometimes as high as $100, but the pool room owners say that they save money even if they hold back the police raiders for 5 minutes. It gives time to destroy racing sheets and other dangerous evidence. The sheet iron and wood doors are strong enough to keep the police sledge hammers at work for 5 or 8 minutes, and the rubber doors are counted upon to make a delay of 12 to 15 minutes.

The business of constructing heavy doors for the uses mentioned above is reported to have been carried on for 20 years by "Old Jack" Woods, of the Bowery, his only recognized rival being Sing Gow, who does similar work for the Chinatown gambling dens.

THE LATEST DEFINITION.—A man with an elastic step may call himself a rubber planter.—*Mexican Herald.*



EIGHT SPOOL WIRE STRANDER.

AN EIGHT SPOOL WIRE STRANDER.

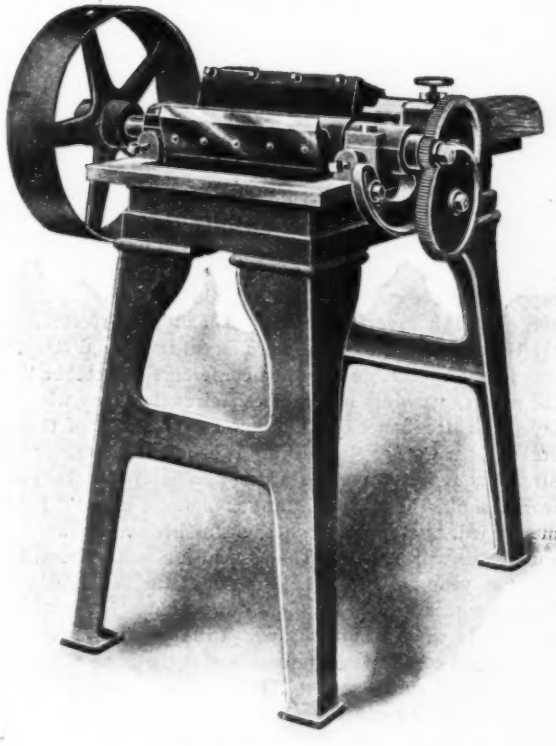
THE necessity for a thoroughly reliable eight wire stranding machine for cable building that is strongly and compactly built, has been met. This new machine is the result of many years of experience and experimenting by men who knew what they were after and how to get it. It is built in two bays, with four spools to the bay. By an ingenious arrangement the cradles are connected at the rear to an electric ring which gives back motion to the spools, at the same time preventing the wires from getting twisted. The cradles are made of high grade steel castings and fitted into bushed bearings formed in the spiders. Three spiders run on rollers, while the center spider is also provided with an upper roll, a contrivance that is valuable in giving rigidity to the machine when running at high speed and out of balance. The machine has cut gears throughout. The capstan wheel has a diameter of 48 inches, with an eight face. The machine is furnished for belt or motor drive and can be run right or left at will, at high speed. It is especially recommended where a large output of high grade strand is desired. [Aiton Machine Co., New York city and Harrison, N. J.]

ADAMSON'S BAND CUTTING MACHINE.

THE machine illustrated herewith is adjustable for any kind of work, from the shortest to the longest rubber bands. The cutting is done by means of a band knife and three other knives on a cylinder. The cylinder is revolved at a high speed by means of a pulley belted direct to the counter shaft. The mechanism is simple, being operated by means of gears, and all standard widths and lengths of bands can be cut on this machine. The cylinder makes up to 300 revolutions per minute, and, having three knives, the work of the machine for any width or length of band is about 900 per minute. The machine weighs approximately 600 pounds. It is in use by a number of manufacturers of rubber bands and has given general satisfaction. [A. Adamson, Akron, Ohio.]

PLANTING "CEARA."

WITHOUT indicating its authority, *The South American Journal* (London, April 21) makes the following statement regarding the cultivation of *Manihot Glaziovii*: "The cultivation of India-rubber plants in the state of São Paulo is reported to have undergone a complete change, as a result of the arrival in the country of a Portuguese from Ceará, a year ago. About eight years ago the growing of maniçoba plants for the collection of rubber was inaugurated, but the results were not financially successful, and thousands of 5 and 6 year old maniçoba trees were cut down. The advent of the Portuguese led, however, to the discovery that the trees had not been tapped at the proper time, but that if drawn at the appropriate period the yield of juice from a 6 year old tree produces 50 per cent. of pure rubber. As a consequence, the cultivation of the maniçoba plant has been resumed, and it is estimated that 5000 acres of land are now planted in this manner, and that the production of rubber will increase every year, owing to the great annual yield from each tree and the more skillful method of collection."



ADAMSON'S BAND CUTTING MACHINE.

RUBBER INTERESTS IN EUROPE.

THE CONTINENTAL COMPANY'S EMPLOYES.

DURING the latter part of April Herr Director Adolf Prinzhorn, of the Continental- Caoutchouc- and Gutta-percha Co. (Hanover, Germany), invited the company's employés to meet him one noon, and gave them a strong talk. He began by enumerating and giving the amounts of the various company funds for the support of sick workmen and the widows and orphans of former workmen, and stated that the board of directors intended to increase these still further. He said that 160,000 marks were now set apart for the support of widows and orphans, which would allow each widow 200 marks a year. The total sum paid out to or for the workmen, on account of sickness, injuries, life insurance premiums, etc., had amounted to 1,052,093 marks within the last five years. At the end of each jubilee period (25 years) each employé receives 300 marks.

Director Prinzhorn then went on to say that the workmen were not regarded as so many people on the pay roll, but that the managers took a personal interest in them, and had their interests at heart. He deplored the strike attempted early in March, which might have caused great suffering to thousands of families; for the company were determined to shut down the works, rather than yield to the strikers. He declared, moreover, that the company would always refuse to have any dealings with their employés through outside mediators. Within a year, however, he said that the workmen would be invited to attend a meeting for the purpose of discussing the general management of the company, where misunderstandings would be cleared up, though the management would strongly disapprove of the workmen conversing with newspaper reporters on these matters. With nearly 4000 employés in the works, the management recognized that mistakes and misunderstandings would sometimes arise; and they would be grateful to any workmen who should tell them when anything went wrong anywhere.

THE BRITISH RUBBER MANUFACTURERS.

THE annual report of the India Rubber Manufacturers' Association for the year ending December 31, 1905, which has been printed, shows that the conference to which manufacturers in other countries were invited for the purpose of discussing difficulties experienced in connection with the supply of crude rubber, failed to be held in London in October, although favorable responses had been received from the United States, Canada, Germany, Russia, and Italy. "It was found impossible to hold a conference in October," says the report, "owing to unforseen circumstances which delayed the attendance of Mr. Ivins, the president of the General Rubber Co., of New York. It is felt very essential that Mr. Ivins, representing the largest purchasers of rubber in the world, should be present at any conference held." It is not mentioned, by the way, whether further steps toward such conference will be held. The association was addressed during the year by Mr. P. J. Burgess, of the Federated Malay States, whose visit to England in the rubber interest is mentioned elsewhere in this issue. In May, 1905, a resolution was passed committing the members to the issue of advanced lists on mechanical goods. During the year the members manufacturing cycle tires held meetings with the result of agreeing upon guarantees and some other matters. As a result of discussion within the association, The Rubber Trade Mutual Insurance Co., Limited, was established, with good prospects. The membership now embraces 22 rubber manufacturing companies. The officers elected for this year are:

Chairman.—OSWALD G. MOSELEY.
Vice Chairman.—J. E. HOPKINSON.
General Committee.—R. K. BIRLEY, R. ECCLES, F. W. INGRAM, W. H. HENDERSON, PHILIP H. LOCKHART, G. C. MANDLEBERG, F. PEGLER, JAMES TINTO.
Treasurer.—JAMES E. BAXTER.
Secretary.—F. B. KNOTT, Manchester.

AUSTRIA.

PRICES are higher in Austria on elastic webbing goods such as garters, hose supporters, and the like, due to the continued high cost of rubber and cotton, though it is claimed that manufacturers have not succeeded yet in securing prices commensurate with the increase over the former cost of materials. Opposition to the new prices is reported to come from the wholesalers rather than from dealers and consumers. *Gummi- und Asbest- Zeitung* (Vienna) suggests an agreement among the rubber manufacturers for the purpose of making the advance on goods of this class uniform—a condition which does not now exist.

TURKEY.

IN a report by the commercial expert attached to the German consulate at Constantinople, it is stated that Russian rubber shoes have almost crowded out of the Constantinople market the American article. Inquiries in proper quarters go to show that some mistake has been made, as the sale of American rubbers was never so brisk in Constantinople as now, and much more trade could be done if more credit was given. The German rubbers are also selling well.—*The India-Rubber Journal.*

GERMANY.

FRANKFURTER Gummiwaren-Fabrik Carl Stöckicht A.-G. [See THE INDIA RUBBER WORLD, December 1, 1905—page 78] has declared a dividend of 5 per cent. on the business of 1905. The capital stock is to be increased from 1,500,000 marks to 2,100,000 marks [=$499,800], the new issue being taken by a syndicate at 103.

GREAT BRITAIN.

THE golf ball manufacture carried on hitherto by Hutchison, Main & Co., at the Springvale works, Cowlairs, Glasgow, Scotland, has been transferred to Hutchison, Main & Co., Limited, registered at Edinburgh in April, with a capital of £100,000 [=$486,650]. The public was not asked to subscribe. This is the company against which an unsuccessful action was brought lately by the patentees of the Haskell ball.

=Johnson & Phillips, Limited, Old Charlton, Kent, have been elected members of the Cable Makers' Association, and their standard wire will in future bear the official labels authorized by the association. The company report that the cable gear and equipment which they supplied for a new cable steamer now under construction in Japan for the government of that empire has been successfully installed.

=The Rubber Co. of Scotland, Limited, at Stirling, are mentioned as having made a rubber conveyor belt 20 inches wide and over 1100 feet in length, for use in conveying gold ore in a South African mine.

=W. T. Henley's Telegraph Works Co., Limited, recently laid a 20-pair telephone cable across the Tagus river, in Portugal, for the Anglo-Portuguese Telephone Co.

TRADE OF AKRON AND VICINITY.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD. Perry Ewar, a director of the Ohio State Fair, is making an effort to interest Akron rubber manufacturers in exhibiting at the fair this fall. Mr. Ewart is an Akron man and is anxious to have the Akron rubber industries represented at the fair, as a means to advertising the city. Some of the larger rubber companies are entertaining the proposition, and if it is decided to exhibit, rubber mills will be shipped to Columbus, and an exhibition will be given of the manufacturing processes.

"Wanted, experienced rubber mill men" is an announcement printed in all of the local newspapers in Akron and its vicinity. All the rubber companies here are seeking additional help. The larger companies are experiencing the greatest difficulty in securing the proper amount of help to turn out the large orders which are on hand and which have been greatly enhanced by reason of the San Francisco disaster, in which some of the companies have lost their entire stock. Not only is this demand manifest in Akron, but rubber factories throughout the country are seeking help in Akron by inserting advertisements in the Akron papers. Efforts of the outside factories, however, have been futile, as all available help is being taken up by the Akron plants, which are hiring every person offering, with any experience at all in the rubber business.

The various rubber factories of Akron will be visited on June 6 by 100 merchants and manufacturers of Pittsburgh, who will spend the day going through the various plants. This is the sixth annual trade excursion made to Akron under the auspices of the Merchants' and Manufacturers' Association of Pittsburgh, and these excursions mean considerable to the rubber trade of the city, as many of the excursionists are big customers of the Akron rubber companies.

President H. B. Camp, of the Faultless Rubber Co., has made the statement that there is a possibility of the Ashland branch factory being abandoned and the machinery and the manufacturing done there transferred to the main plant in Akron. This has been under consideration for some time. One reason has been the failure of the Ashland council to open a street leading to the plant of the Faultless company, which is installed in a building erected for the operation of the Pneumatic Horse Collar Co., a concern which failed. The Ashland council recently took steps looking to the opening of the desired street, but not until considerable criticism had been heard from citizens, in view of Mr. Camp's announcement, above quoted.

Some time ago announcement was made that $2000 had been donated by a prominent business man of Akron to the Sunday School class of L. C. Miles, general manager of the American Cereal Mills, of Akron, to pay the expenses to Washington city and return of the entire class The class numbers 58 persons, and on May 8 the party left Akron on a special train for the National capitol and returned on May 12. The class was entertained in Washington by United States Senator Charles Dick, of Akron, who introduced all of the members of the party to the President. The name of the donor was at first a secret, but it now appears to have been Colonel George T. Perkins, president of The B. F. Goodrich Co.

Since the opening of the new plant of the Aladdin Rubber Co., at Barberton, there have been several thefts of rubber scrap from their premises. The police arrested three children aged 9, 11, and 16 years, who after their arrest, admitted that they carried off about 1200 pounds of rubber, which they sold to junk dealers for $3 per hundred pounds. The children were committed to the reformatory.

From the annual report of the Akron city hospital for the year ending May 1, The B. F. Goodrich Co. are named among the principal donors to the hospital. During the year this company donated 32 dozen pairs of surgeons' gloves, 125 yards of rubber sheeting, and a dozen other important items of rubber supplies.

After a three months' automobile tour of Europe, Mr. Bertram G. Work, vice president of The B. F. Goodrich Co., and party returned to Akron on May 15. The party, which comprised Mr. and Mrs. Work and two others, left Akron three months ago, with a large touring car. They visited many points of interest in France, Italy, Germany, and England.

The Buckeye Rubber Co. are about to start building a big addition to their plant in East Akron. The new addition is to be connected to the main plant by sheds which will be used for storing lumber. During the past year this factory has undergone many improvements and the company are continually adding to their facilities for manufacturing.

The B. F. Goodrich Co. have been brought into a new prominence, now that several manufacturing cities in the vicinity of Akron are fighting the smoke nuisance. Edward J. Lander, a constructing engineer of Canton, Ohio, who has a wide reputation in his profession, has sent out a letter to city councils where smoke nuisance ordinances are being considered, in which he calls attention to the smoke stacks at the plant of The B. F. Goodrich Co., one of the largest factories in Ohio, as an example of smoke restriction. He declares that if officials and manufacturers are sufficiently interested to really desire to abate the smoke nuisance, observations of the various smoke stacks at the Goodrich plant "and a tracing to the source of the stacks that are alive and issuing the least smoke, will be pregnant with the information desired."

The suit brought some time ago in the local common pleas court by the Louisville (Ohio) Deposit Bank Co., against the Rubber Speciality Co., of Akron, resulted a judgment in favor of the bank for $1,161.24, alleged to due the plaintiff on a promissory note given by the defendant company several years ago.

Mr. John F. Singleton has been appointed advertising manager of the Firestone Tire and Rubber Co. Mr. Singleton has been the representative in this vicinity of the mercantile agency of R. G. Dun & Co. for a number of years.

The Pan American Crude Rubber Co., of Akron, was incorporated under the laws of Ohio, early in May, with a capital named of $10,000, which later was increased to $500,000. The incorporators are George G. Allen, E. A. Oviatt, F. H. Waters, Harry E. Andress, and F. E. Whittemore. All are Akron lawyers, except Mr. Oviatt, who is identified with the Standard Table Oil Cloth Co. Mr. Allen is one of the officers of the Faultless Rubber Co. The incorporators have not given out any statement of their plans further than the company expect to cultivate rubber trees and place the crude product on the market.

The Wright Rubber Manufacturing Co. have purchased a large piece of property in Mansfield, on which they will locate their plant. The plans for the new factory are now being prepared and as soon as they are finished work will be started on its erection.

The Alling Rubber Stamp Co., of Akron, in response to the appeals for aid sent out from San Francisco, wrote to Mayor Kemple offering to replace at cost of production all rubber stamp goods lost in the San Francisco disaster.

The Mitzel Rubber Co., of Akron, which has its factory located at Carrolton, Ohio, is preparing to build extensive additions to its plant this summer. At present the company's plant is taxed to its capacity, and the steady growth of its product has demanded more room. The new additions will be erected upon the three acre tract of land owned by the company adjoining its plant. With the advent of spring the company has been obliged to work at night to turn out its products such as gloves, druggists' sundries, and water bottles.

Mr. Joseph Dangel, of the American Hard Rubber Co., has tendered his resignation as councilman in Akron, owing to not having time to attend to the duties of the position. Mr. Dangel has served four years in the council.

The warning sent out to all cities in Ohio by the state fire marshall, to the effect that cities must pass ordinances prohibiting the use of rubber hose for gas connections where natural gas is used, has caused a decided slump in the demand for rubber hose or tubing. Inspections are necessary by gas companies to see that consumers are not using rubber tubing in connecting gas stoves.

Charles S. Scott, of Cadiz, Ohio, inventor of a detachable pneumatic tire for which a patent was recently granted, has assigned his patent rights to the Goodyear Tire and Rubber Co., who have begun the manufacture of the new tire.

C. C. Shults has been appointed general manager and superintendent of the Alden Rubber Co., at Barberton. Reports from this company are most encouraging.

The plant in Barberton of the Pure Gum Specialty Co., which has merged with the Alden Rubber Co., is now occupied by a branch of the International Harvester Co. in the manufacture of small farm implements.

THE NEW JERSEY RUBBER INDUSTRY.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The case of Colton Fulton, against the Grieb Rubber Co., of Trenton, in which three verdicts have been rendered, is again before the courts of New Jersey, a writ of error having been granted which will carry it to the court of errors and appeals for the June term. The litigation has been pending over four years, and the suit is looked upon as one of the famous ones in Mercer county. Fulton was an employé of the Grieb company, and on September 22, 1899, lost both hands in a mixing machine while at work. He claimed that he was shocked by an electric light wire, causing him to fall against the machine, with the result stated. Fulton brought suit against the company for $25,000. In January, 1902, he was awarded a verdict of $6500, which the supreme court set aside upon the ground that the weight of evidence was against the plaintiff's version of how the accident happened. A new trial was ordered, and in January, 1904, a jury in Mercer court rendered another verdict for Fulton, for $6800. The Grieb company secured a rule to show cause why a new trial should not be granted. The third trial also resulted in a verdict for Fulton, which the supreme court reversed. Now the writ of error has been secured by counsel for Fulton, carrying this decision to the court of last resort for re-argument. The only point upon which the supreme court set aside the last verdict was that the electric plant had only been installed in the Grieb mill three months, therefore the company was not bound to show that the electric wire in question had been inspected. This was a question of law. On all questions of fact the verdict for Fulton was sustained. The particular point referred to will be contested by Fulton's counsel.

Mr. Allan Magowan, of the Modern Rubber Manufacturing Co., who has been ill for the past five months, is now about again, though not able yet to resume control of his business. The factory, under the management of a son, has been run-n ng at full capacity.

The Asbury Park fire commissioners have placed an order for 500 feet of fire hose with the Eureka Fire Hose Co. and 1000 feet with Woodhouse & Co., a New York jobbing firm.

C. Edward Murray, head of the Crescent Belting and Packing Co., accompanied by Mrs. Murray, has recently been on a month's tour through the West, visiting Chicago, Denver, Colorado Springs, San Francisco, and other points. Governor Stokes granted Mr. Murray a month's leave of absence from his duties as quartermaster general of the state.

The new addition to the plant of the Whitehead Brothers Rubber Co. is about completed. The increase of business in the hose and belting lines made more room necessary, and a new brick building, 55 × 50 feet, two stories, was erected. With the added facilities the company now have a hose room 200 × 50 feet. In the belting department a new Farrell press 50″ × 26′ has been set up, and a new hydraulic pump installed. The fire fighting appliances throughout the factory have been given a complete overhauling, and new sprinkler heads been put in both the old and the new buildings. The plant also has a fire pump with a capacity of 1000 gallons per minute. Beside these improvements, one new building for storing materials and stock has been erected and two more are contemplated.

The Trenton Rubber Reclaiming Co., the name under which Mr. Newman London has started Trenton's latest rubber industry, began operations during the past month. This concern occupies the building formerly used by the Trenton Athletic Club. The alterations are not completed yet, but the engine and grinders have been installed and the work of reclaiming by the acid process has been started. Several carloads of scrap rubber and a car of acid are on the grounds and the work is being rushed. In addition to the building already purchased, two lots on Olden avenue, 30 × 100 feet, have been secured and will be utilized for storage purposes at present.

The Trenton *Daily True American* of May 5 embraced a large Industrial supplement, devoted to the leading manufacturing establishments of this thriving city, in which special prominence was given to the rubber industry, which is estimated to have increased in volume by 25 per cent. during the past five years. The Home Rubber Co. and the Joseph Stokes Rubber Co. are each the subject of a special article.

NEWS OF THE AMERICAN RUBBER TRADE.

LOWER FREIGHT RATES ON TIRES.

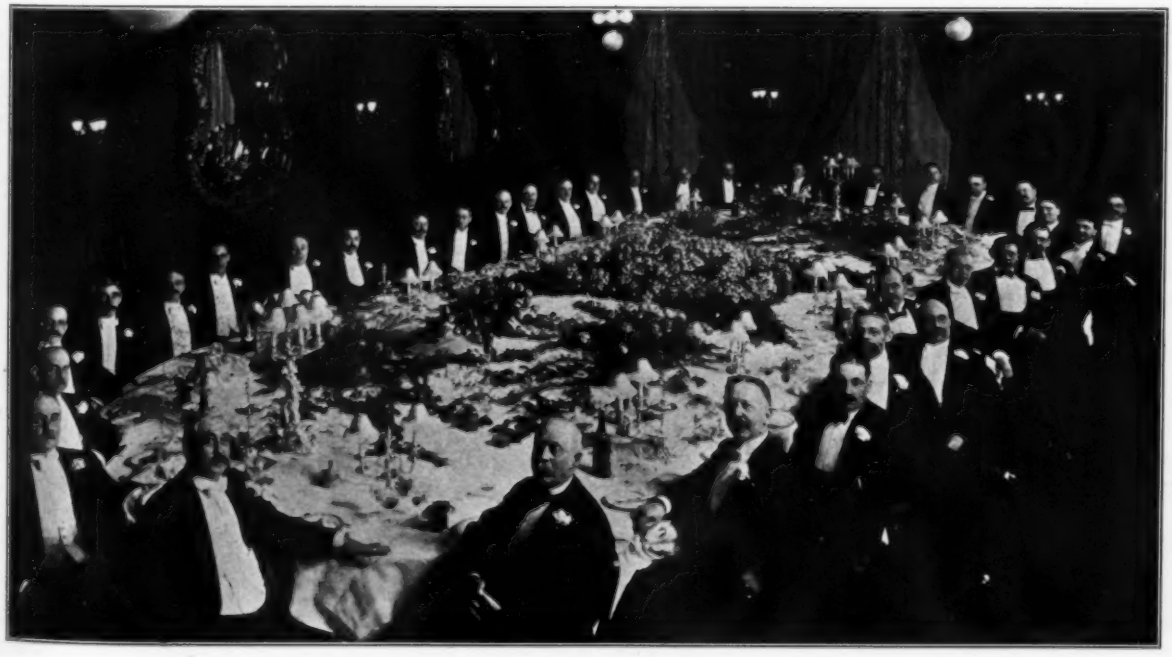
RATES have been lowered materially on rubber tires as freight on the railways in the territory covered by the Western Classification Committee, dating from April 28 last. Not only is the rate lowered on tires in less than carload lots, but the terms "inflated" and "deflated" have been eliminated in describing the packings. Formerly a higher rate was charged on inflated tires, and it was alleged by the manufacturers that practically all the tires shipped were classified as inflated, when, as a matter of fact, all the rubber companies ship them as near a deflated form as possible. This concession is the result of efforts extending over two years. In November last, nothing having been accomplished, Mr. F. R. Lyman, traffic manager of The Fisk Rubber Co., filed with the Interstate Commerce Commission a blanket informal complaint, covering all railways, classification committees, and freight bureaus in the United States. This, however, has been withdrawn, and it is believed that the action of the Western Classification Committee will be followed by similar action by the other committees, each at its next meeting. Indeed, hopes are entertained that a uniform classification will be adopted on tires throughout the country, and commodity rates put into effect equal to those furnished the manufacturers of other products which can be classed in the same line of manufacture and sale as are rubber tires. Mr. Lyman, in his efforts toward this end, has had the active or moral support of other leading tire firms.

MANUFACTURED RUBBER CO.—ANNUAL.

THE annual meeting of shareholders of this company—the second since the reorganization—was held on May 9 at the registered offices in Camden, New Jersey. The report for the business year ending January 31 showed net profits of $23,348. President Platt said that the company's business during the first three months of the current year showed a satisfactory increase in profits over the same period last year. The company had a satisfactory working capital and was without debt of any kind. The following were elected directors: Clayton E. Platt, John S. Arndt, George G. Peterson, J. P. Cummingham, Edward J. Dumee, and G. H. B. Martin.

ST. LOUIS RUBBER CEMENT CO.

THE St. Louis Rubber Cement Co. have so increased their business during their short career of 10 months that a new building is in process of construction for them which will provide greatly increased facilities. At the beginning, July 1 last, the output of cement was at the rate of 10 barrels a day. The new building will have a capacity of 100 barrels a day, and in addition there will be ample equipments provided for the handling of a varied line of rubber goods for which the firm will act as agents. Main and Spruce streets, a central location, has been chosen for the prospective business home of the company which, it is expected, will be ready for occupancy by August 1. It will be of steel and brick construction, fire proof, and up-to-date in every particular.



RUBBER SUNDRIES MANUFACTURERS' ASSOCIATION.

[Scene in the banquet room, Hotel Astor, New York, April 12 —See THE INDIA RUBBER WORLD, May 1.]

NEW HEAD OF THE HARTFORD RUBBER WORKS.

AT a meeting of the directors of The Hartford Rubber Works Co., in New York, on May 8, Thomas Midgely, who had been a vice president of the company since September last, was elected to the office of president. The position had been held temporarily by Charles H. Dale, president of the Rubber Goods Manufacturing Co. Mr. Midgely went to Hartford in March, 1905, as consulting engineer for the rubber works. He retains the presidency of the Midgely Manufacturing Co., makers of vehicle wheels, at Columbus, Ohio.

THE B F. GOODRICH CO IN CHICAGO.

THE Chicago branch of The B. F. Goodrich Co. (Akron, Ohio) has been removed from No. 141 Lake street to No. 24 East Lake street, where they will occupy a five story building with basement. This move has been due to the increased business of the company demanding larger quarters. The new move brings them in closer touch with the automobile trade, without taking them out of the mechanical goods and druggists' sundries district.

THE NEW KANSAS RUBBER FACTORY.

THE Kansas Rubber Co., located at Olathe, Kansas (a suburb of Kansas City, Mo.), report that the work of equipping their factory is progressing rapidly. The offices have been furnished and occupied, the mill room machinery is installed, and the power plant practically completed. A supply of tire molds, presses, etc., is now due at the factory, as well as the machinery made to order especially for their reclaiming plant, and the company hope to be able to begin operations by July 1.

MAGNESIA PATENTS LITIGATION.

LITIGATION extending over a period of more than five years and involving a sum estimated at more than $1,000,000, the contesting firms including some of the best known and most wealthy in the United States, has been practically disposed of by the decision of Justice Coxe, in the United States circuit court for the eastern district of New York, in favor of the Keasbey & Mattison Co. (Ambler, Pennsylvania). The suits were the result of alleged infringement of certain patents owned by the Keasbey & Mattison Co., and were directed against the American Magnesia Co., the Philip Carey Co., of Ohio, the C. W. Trainer Co. and the H. W. Johns-Manville Co. There were involved the Hanmore patent (No. 345,843—July 20, 1886), for a magnesia covering for steam pipes, and the Keasbey "machine mold patent.

There is yet one suit to be disposed of—the most interesting and peculiar of the entire number yet tried. The charge is "conspiracy to infringe a patent," and the amount of damages claimed by the Keasbey & Mattison Co. is $600,000. This is entirely apart from the suits for damages recently disposed of.

BOSTON ASBESTOS WORKERS' STRIKE.

THE strike of the Boston Insulator and Asbestos Workers' Union, which was inaugurated on May 1, is still unsettled. The men, about 100 in number, demanded an advance of 50 cents a day, and asked that in case of a refusal the matter be left to the state board of arbitration. The employers replied that they could not see their way clear to make the advance at this time. The request for arbitration was also denied. At a meeting of the workmen on May 11 a secret ballot was taken with the result that every man present voted to continue the strike. About 25 per cent. of the men have left town.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	Common.			Preferred.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Apr. 21	9,960	54⅞	51¾	2,400	111⅜	108½
Week ending Apr. 28	17,900	53¾	49¼	2,700	109½	106⅞
Week ending May 5	19,750	51¾	48½	4,190	108	105½
Week ending May 12	10,300	51¾	50	4,200	111½	108⅜
Week ending May 19	9,900	51	49¾	1,000	110¼	109

SECOND PREFERRED.

WEEK ending—Apr. 21.	Apr. 28.	May 5.	May 12.	May 19.
Sales..... 1,500	501	1,800	1,400	900
High..... 80½	78½	78½	81¼	80½
Low..... 79½	76⅜	75	78	80

AN UP TO DATE TIRE REPAIR SHOP.

WHEN the Continental Caoutchouc Co. installed a special combination wrapping and buffing machine in their repair shop at No. 43 Warren street, New York, they completed what is one of the best equipped tire repairing plants in America. This, by the way, is the only machine of the kind in this country. Until this machine was put in operation the buffing was mostly done by hand, a slow method at best, and not always satisfactory. Another machine in the Continental outfit that deserves special mention is a sewing machine of extraordinary strength for stitching through tire covers. Besides these, there are five other especially designed machines in use, each having an important part in the general scheme of the shop. All the machines and the men to operate them were imported from the "home" factory, at Hanover, Germany. Twelve men, each an expert in his line,

CONTINENTAL CAOUTCHOUC CO.'S REPAIR DEPOT.
[Corner of the Construction Room, Repair Department.]

are employed, and others will be added to the force as they are needed. Large as is the Continental repair department, it is hardly large enough. In addition to their regularly organized branches in Buffalo, Boston, Cleveland, and Detroit, the Continental Caoutchouc Co. have agencies in Chicago, Philadelphia, San Francisco, and other cities, and all these branches and agencies send their repair work to the New York shop. Mr. Hugo Hoffstaedter, the manager of this part of the business, is perfecting plans to establish repair shops in the other cities where the Continental tire business centers. Already a start has been made at Buffalo, and one of the combination wrapping and buffing machines is on the way from Germany to form the nucleus of the Buffalo equipment. All repairs in the Continental shop are made according to the methods employed in Europe, and each tire repaired is sent out under a guarantee.==It may be added that in order to meet the constantly increasing demands of the New York city trade, a branch store for Continental tires has been opened at No. 2100 Broadway, under the management of Mr. J. Stewart Smith, who was formerly in charge of the adjustment department in the company's Warren street offices.

THE NEW COMPANY AT NORTH BROOKFIELD.

A NEW company is being organized for the manufacture of mechanical rubber goods, at North Brookfield, Massachusetts. The new company embrace Mr. Thomas G. Richards, late superintendent and chemist of the Boston Woven Hose and Rubber Co., and Mr. Charles C. Beebe, who was head salesman of the same company, who resigned their positions on May 15, in order to be free to proceed with the organization of the new enterprise. The location of the proposed new factory at North Brookfield is due to the activity of the Industrial Association of that town, through the agency of which subscriptions to the capital of the new company have been made by a number of citizens. The two rubber men above named have proved their ability in their respective lines, though they are still young; they are energetic, and confident of their ability to carry out the new project. The resignation of Mr. Richards from his former position, by the way, makes a fine opening for an ambitious and capable man.

THE NEW YORK BELTING AND PACKING CO.

THE New York Belting and Packing Co., Limited, formerly located at Nos. 605-607 Mission street, San Francisco, have moved their headquarters to No. 918 Broadway, Oakland, California, said location to be retained by them until May 1, 1907, when they will return to the "New City." The management of the Pacific Coast branch is now conducted by Mr. A. H. Gregory, who has been associated with this branch for twelve years past. In seeking the new location, his first object was to protect the interests of the company, and it is needless to say that they are the most centrally located of any of the rubber companies now in Oakland. It is the intention of the New York Belting and Packing Co., Limited, to continue the prosecution of business on the Pacific Coast with the utmost energy, realizing that the large capital at their disposal places them in an enviable position, and considering the fact that the disturbance of this one branch does not materially affect the company, and as they were fully covered by insurance. It is the intention of the company to carry the largest and most complete stock on the Coast, that has ever been carried. They were first on the ground with a complete stock, and the orders which have come from all parts of the Pacific coast have been shipped with the least possible delay. The parent company, at New York, immediately upon advice that its Pacific Coast branch had been destroyed by fire, telegraphed all their trade of the Coast, on April 19, to forward their orders direct to New York. The loyalty of the various customers to the company was never more fully demonstrated than at this important period. The volume of business that has been booked at the New York office in the interests of the Pacific Coast branch makes it appear on their books as though no interference had taken place in the Pacific Coast branch.

"UBERO" BORGES ON TRIAL.

FERDINAND E. BORGES was placed on trial on May 14, before a jury in a special session of the superior criminal court in Boston, Judge White presiding, on charges connected with the promotion of the Ubero rubber plantation companies. Borges has now been in jail for nearly seven months, in default of $75,000 bail. He is on trial on two counts of conspiracy to steal and 126 counts of larceny. The history of the promotion has been gone over in great detail, involving the representations made to secure money from the public, with testimony to show that conditions on the plantations in Mexico were not at all as claimed. The trial is still in progress as these pages go to press.

TRADE NEWS NOTES.

THE Combination Rubber Manufacturing Co., of Bloomfield, which recently passed into the control of the Hamilton Rubber Manufacturing Co., of Trenton, is now in first class condition and doing a very satisfactory business. As mentioned in the May issue of THE INDIA RUBBER WORLD, this company increased its capital stock from $150,000 to $500,000. The new stockholders assumed and immediately paid off all the liabilities of the company and it is now established on a firm financial footing. Mr. Edmund D. Cook said to THE INDIA RUBBER WORLD representative that he was very well pleased with the volume of business done. The company has all the orders on its books it can fill. The Combination company, while under the control of the Hamilton company, will be operated as an entirely separate plant manufacturing a complete line of general mechanical goods. Mr. Edward Openshaw, formerly of the Home Rubber Co., of Trenton, is superintendent, and Mr. Fred H. Conover, formerly of the United and Globe Rubber Manufacturing Co'.s, is in charge of the executive force. Business conditions at the Hamilton Rubber Manufacturing Co. are also highly satisfactory.

=Captain Bruce Griggs and Captain Fred McDermott, identified hitherto with the navigation of the Columbia river, left New York during the month to investigate conditions on the upper Amazon and its tributaries, with the object of establishing there a line of light draft steamers for trading and commercial purposes. Their objective point is in the rubber districts, and among those who will be interested in their success is a rubber manufacturing company near New York.

=The report of the merger of two important Canadian rubber manufacturing companies, appearing lately in several newspapers, appears to have been published without authority.

=Morgan & Wright, who lost their entire stock of tires in the San Francisco fire, have located offices temporarily with the Pioneer Automobile Co., No. 901 Goldengate avenue, San Francisco.

=Mr. Harrison C. Frost was mentioned in the last issue of this Journal as having been "appointed" second vice president of the Canadian Rubber Co. of Montreal, Limited. The position was created at a recent meeting of the directors, and Mr. Frost duly elected to it, to have charge of the operating departments of the business—manufacturing, purchasing, and selling.

=Mr. J. A. Wade, well known in the New England rubber industry, has been appointed manager of the mechanical goods department of the Canadian Rubber Co. of Montreal, Limited. Mr. F. A. Paulin, connected hitherto with important American tire factories, has been placed in charge of the Canadian company's tire department.

=An attachment for $25,000 was placed, May 22, on the property of the Atlantic Rubber Shoe Co. (Providence, Rhode Island), in the suit of Ethan H. Cutler, of Boston, to recover money claimed to be due him for services rendered the company while in their employ as selling agent, between April, 1904, and October, 1905.

=The directors of the Boston Woven Hose and Rubber Co. have declared a semi annual dividend of $3 per share on the preferred stock, payable June 15, 1906, to stockholders of record June 5.

=The International A. & V. Tire Co. (Milltown, New Jersey), have become established at new quarters in San Francisco since the fire—at No. 318 Market street.

=The position of general manager has not been filled for several years past by the United States Rubber Co. This year, however, the position has been revived, and in recognition of the ability of Mr. Homer E. Sawyer, he has been promoted to the discharge of its responsibilities.

=Pennsylvania Rubber Co. (Jeannette, Pa.) have opened branch stores for the sale of their tires and mechanical rubber goods, as follows: *Chicago*, No. 1241 Michigan avenue; *Buffalo, N. Y.*, Main and Tupper streets; *Atlanta, Ga.*, No. 102 North Pryor street—in addition to the branches already established in New York, Philadelphia, Boston, and London.

=Philip Broomfield & Co., dealers in rubber scrap, in Boston, have removed to their new building on Midway street, off A street. They occupy a three story building (4000 square feet on each floor), with a spacious yard adjacent to railway tracks, and equipped with the best mechanical appliances for handling stocks.

=Gustave Van den Kerckhove, for many years identified with India-rubber interests, has opened an office as consulting expert on rubber, at 21, rue de la Ferme, Brussels, for dealing with commercial and technical valuations of crude rubber, and reporting on rubber cultural prospectuses.

=Standard Asphalt and Rubber Co., mentioned in the April INDIA RUBBER WORLD (page 237) as having been incorporated in New Jersey with $1,000,000 capital authorized, have opened offices in Chicago, at No. 218 La Salle street. E. G. Leszynsky is president, F. S. Ackerman vice president, and A. B. Wilson secretary and treasurer. Work has been begun on the construction of a factory at Independence, Kansas, from the manufacture from crude petroleum of roofing materials, insulating materials, pipe coatings, etc., under patents controlled by the company.

=The India Rubber and Gutta Percha Insulating Co. (New York) have removed their New York office from No. 13 Cortlandt street to No. 253 Broadway, where Mr. James B. Olson, their sales manager, will have largely increased facilities.

=Farrar Fenton, the inventor of what is known in England as Fenton's "artificial rubber," arrived in New York on May 2, en route for Chicago, where a company has been formed for exploiting this product in the United States. The company, known as the National Co., has headquarters at 506 Rector building, and was promoted by Henry P. Daly, of Chicago. Mr. Fenton is 75 years of age.

=Dr. J. T. Cooper, of Paterson, New Jersey, has made arrangements for the manufacture and sale of his "Fearnaught" puncture proof tire in Canada, in which country it has been patented, as well as in Great Britain, France, Germany, and the United States.

=The Canadian Rubber Co. of Montreal, Limited, have placed on the market their new "Keystone" side wire tire. This tire has some features not to be found in any other make, and The Canadian Rubber Co. have exclusive control of the patent rights for manufacture and sale in the Dominion. A large amount of business has been booked, and the carriage trade are displaying great interest in the new tire.

=Mr. R. J. Younge, sales manager of The Canadian Rubber Co. of Montreal, Limited, has been on an extended business tour in western Canada, visiting the company's sales branches and also calling on the trade.

=The new rubber cement factory of The Canadian Rubber Co. of Montreal, Limited, is now in full operation, and exclusive contracts for the supply of rubber cement have now been concluded with some of the principal footwear manufacturers of the Dominion. The plant is equipped with all the latest appliances for the production of high grade cement. Mr. A. D. Thornton, technical superintendent of the company, devotes a good deal of his time to this special branch of manufacture.

=Mr. F. A. Paulin is now in charge of the Tire department of The Canadian Rubber Co of Montreal, Limited. Mr. Paul n is a Canadian by birth, and spent his early years in the carriage trade in Ontario. He has had extended experience during the past 12 years throughout the larger cities in the United States, and was lately Chicago manager for The India Rubber Co. (New Brunswick, New Jersey).

=Grieb Rubber Co., Inc. (Philadelphia), send out to their customers every month a bulletin calling attention to their newest products, which is original and attractive in appearance and contents, and can hardly fail to be read with interest by those receiving it.

=Hardman Rubber Co. (Bellevilie, New Jersey), who have been long known as makers of druggists' sundries, have taken on extensively the manufacture of hard rubber syringes, as well as the hard rubber brushes mentioned already in these pages.

=The Postal Novelty Co. (Milwaukee, Wisconsin), who are well known for their original and ingenious ideas in comic postal cards, have favored THE INDIA RUBBER WORLD with a number of their cards, showing what they can do in the rubber line. One card, made in the shape of an express tag, has tied to it a tiny rubber hot water bag, perfect in all but its size. On the back is pictured a dandy toasting, or rather stewing, his toes on a couple of hot water bags. Several cards have a bit of rubber sponge or a rubber baby nipple tied in one corner, with various comic pictures and appropriate inscriptions relative to suckers and sponging on one's betters. The pictures are grotesque, but some of them quite ingenious.

=The O'Sullivan Rubber Co. (Lowell, Massachusetts) received by wire from San Francisco, as soon as the telegraph service was restored after the great fire, an order for 100 gross of their rubber heels.

=Colonel Louis H. Aymè, for several years past United States consul at Pará, Brazil, has been promoted to the position of consul general at Lisbon.

=The American Can Co. (New York) are supplying rubber planters with special shapes of rubber gathering cups, also a variety of utensils for holding, storing, and straining latex.

=Mr. John P. Lyons, advertising manager of the United States Rubber Co., after a vacation of several months spent on the Pacific coast, has resumed charge of his work, in the general offices of the company, in New York, much improved in health.

=The Aiton Machine Co. (New York) have been installing, at their works, at Harrison, New Jersey, a number of additional machine tools, especially adapted to the production of their specialties in wire, cabling, stranding, and rubber machinery.

=G & J Tire Co. (Indianapolis, Indiana) have opened a branch in New York, at No. 10 West Sixtieth street, in charge of Mr. A. T. Smith.

=Mr. Max Loewenthal, treasurer of the U. S. Rubber Reclaiming Works (New York), has gone abroad for an extended tour over Europe, to be gone until September.

=The annual meeting of shareholders of the Consolidated Rubber Tire Co. was held on May 7, at the registered offices of the company, in Jersey City, when the board of directors was reëlected. The seven directors were reëlected and an eigth member added to the board—Mr. Clinton Todd.

=Referring to a recently reported fire in the factory of the Apsley Rubber Co. (Hudson, Massachusetts), the company advise THE INDIA RUBBER WORLD that the damage was confined to the churn room. The loss, estimated at $1000 to $2000, was fully covered by insurance.

RUBBER MEN PLAY BASEBALL.

AN interesting game of baseball was played at Kensington Park, Long Island, on Saturday, May 12, between a team made up from the office force of A. T. Morse & Co. (New York) and the club known as the New York Commercial Co. Baseball Club. The former team won by the score of 13 to 2. The make-up of the teams was as follows:

A. T. MORSE & CO.	NEW YORK COMMERCIAL CO.
Sloss, 1 b.	Manchester, r. f.
Treiss, s. s.	Case, c.
Vyse, c.	Gove, 2 b.
White, 3 b.	Sears, captain, 1 b.
Thorndike, c. f.	Baldwin, p.
Gordon, captain, p.	Frey, 3 b.
Copeland, 2 b.	Morse, c. f.
Kelly, l. f.	Barwick, s. s.
Foley, r. f.	Silberbauer, l. f.

GUTTA PERCHA COMPANY AT SAN FRANCISCO.

THE Gutta Percha and Rubber Manufacturing Co. (New York) report as follows regarding their business on the Pacific coast: "We are going right on at San Francisco. We have established temporary headquarters at Alameda, having taken a large warehouse there in Webster street. We have already proceeded to stock it up, having shipped one day four carloads of goods, and supplemented this shipment by sundry other carloads, and by a large amount of miscellaneous goods via water. We have retained all of our old force and propose working it out on the old line. We have been on the coast you know since 1869 and don't propose to abandon it now."

LETTER FROM SAN FRANCISCO.

GOODYEAR RUBBER CO. [May 8].—Our temporary office is located at No. 2600 Pacific avenue. Our factory, at California and Virginia avenues, was not damaged by fire, and we are making goods there as usual. During the interval before a new building can be erected, we are filling orders as though nothing had happened, from our Portland, Oregon, store. We are also pleased to state th t the residences of Mr. Pease and Mr. Runyon, were not within the fire limits. We anticipate a finer and greater San Francisco than before the catastrophe.

Temporary office: No. 2600 Pacific avenue, San Francisco. [This is the residence of Mr. R. H. Pease.]

GORHAM RUBBER CO. [May 8].—We are located in a two story brick building at the corner of Fourth and Washington streets, in Oakland, and are erecting a warehouse, 50 × 150 feet, adjacent to the railroad tracks in the northern part of this city. We have also leased a piece of land on Fremont street, in San Francisco, on which we will erect a new factory for the manufacture of mechanical rubber goods, and although we realize that a terrible calamity has befallen San Francisco, we believe that it will be rebuilt at an early date. At the present time we have a nice general stock of rubber goods at Fourth and Washington streets with some eight or ten carloads in transit from the East and are in a position to fill orders immediately for almost anything.

Temporary office: Fourth and Washington streets, Oakland, California.

PACIFIC COAST RUBBER CO. [May 9].—We have started business again, at No. 2606 Eighteenth street. Also have an office in Oakland, and on June 1 will have our main office open at California and Drumm streets. We have been filling orders promptly from our Northern stores since the fire. We have a number of carloads on the way from the East and in a few days will be able to fill *all* orders.

San Francisco office: No. 2606 Eighteenth street near Bryant.
Oakland office: No. 1116 Broadway.

BOWERS RUBBER WORKS [May 10].—Our manufacturing plant and stock of goods in San Francisco was totally destroyed. Our stock in Chicago and Seattle, and our Oakland factory, where we manufacture cotton rubber lined hose, are uninjured. The cotton hose factory is now in operation, making 30,000 feet of fire hose for the city of S n Francisco. Our Chicago stock of mechanical rubber is being rushed to the coast, and we have closed up our Chicago distributing depot. All our customers in the middle West will be supplied from our California warehouse. Our new factory, which has been building since last November at Black Diamond, California, is nearly completed. The buildings are reinforced concrete, and the machinery will be operated by electric motors. Everything will be thoroughly up-to-date, and we expect the new factory to be in operation in from 60 to 90 days. Fortunately we were owing very little, and are well insured and can go on in business whether the insurance is paid or not; but as our policies are in the best foreign companies, we expect to collect the full amount for which they were written.

Temporary office: No. 455 Merrimac street, near Broadway, Oakland, California.

U. S. RUBBER RECLAIMING WORKS.

THE Buffalo factory of the U. S. Rubber Reclaiming Works has recently started up again after a shut down of several weeks, during which time new machinery was introduced, and numerous changes in their process. These changes have been in contemplation for some time past, but owing to the heavy demand for their reclaimed rubber the company were unable to put them into practice. Their mill had been in constant operation day and night for more than two years, and though they have increased their capacity until their output is 50 per cent. greater than before, it was not until this time that they could accumulate enough finished goods to permit of shutting down long enough to make the desired changes.

As all who are conversant with the reclaiming business will know, there have been numerous reclaiming patents granted, both here and in Europe, during the past few years, and the U. S. Rubber Reclaiming Works, some time since, established a complete chemical laboratory and made exhaustive investigation of each patent and process as it came out. All improvements that they considered of merit they obtained control of, either by purchase or royalty. For the purpose of more thoroughly investigating some of the European processes in actual commercial operation, their general superintendent, Mr. Frank H. Brewster, made a trip abroad early in the year, visiting England and the Continent.

After reporting the result of his investigations the company decided to close the mill at the earliest possible moment, long enough to instal the new machinery and make the desired changes that their investigations had shown would result in an improved product. Although the mill has been in operation but a few weeks since the changes have been made, the results have more than met their expectations, and the company are in receipt of many favorable comments from their customers on the new products.

REVIEW OF THE CRUDE RUBBER MARKET.

THE month closes with slightly lower price levels than at the beginning. The prices reported in our last issue were publicly quoted until toward the middle of May, when a decline occurred, since which time the figures have remained practically without change, though it appears that less uniformity obtained in actual transactions than the quotations would indicate. Such conditions are calculated to render buyers uncertain, and during a considerable part of the month there was little tendency on the part of manufacturers to replenish their stocks beyond immediate requirements. Latterly there appears to have been more interest on the part of consumers, though the condition has been what is termed a "buyer's market."

The result of the Antwerp sale on May 4 is referred to in another column. Another sale was announced for May 30, when 328 tons were to be offered. Pontianak advanced toward the end of the month from $3.76 to $3.95 @ $4.50.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on May 31—is date:

PARA.	June 1, '05.	May 1, '06	May 31.
Islands, fine, new	132@133	122@123	120@121
Islands, fine, old	none here	none here	none here
Upriver, fine, new	133@134	126@127	124@125
Upriver, fine, old	none here	127@128	125@126
Islands, coarse, new	76@ 77	70@ 71	64½@ 65
Islands, coarse, old	none here	none here	none here
Upriver, coarse, new	96@ 97	91½@ 92	90@ 91
Upriver, coarse, old	none here	none here	none here
Caucho (Peruvian) sheet	74@ 75	74@ 75	72½@ 72
Caucho (Peruvian) ball	82@ 83	85@ 86	84@ 85
Ceylon (Plantation) fine sheet			1.50

AFRICAN.		CENTRALS.	
Sierra Leone, 1st qual.	102 @103	Esmeralda, sausage	88@ 89
Massai, red	102 @103	Guayaquil, strip	71½@ 72
Benguella	78 @ 79	Nicaragua, scrap	85@ 86
Cameroon ball	76 @ 77	Panama, slab	63@ 64
Accra flake	22½@ 23	Mexican, scrap	86@ 87
Lopori ball, prime	114 @115	Mexican, slab	62@ 63
Lopori strip, prime	103 @104	Mangabeira, sheet	61@ 71
Madagascar, pinky	96 @ 97	Guayule	35@ 40
Ikelemba	115 @116	EAST INDIAN.	
Soudan niggers	1.01	Assam	95@ 96
		Borneo	45@ 49

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	5$650	Upriver, fine	6$800
Islands, coarse	2$750	Upriver, coarse	4$700

Exchange, 16 1/16 *d.*

Last Manáos advices:

Upriver, fine..... 6$600 Upriver, coarse..... 4$100

Exchange, 16 1/16 *d.*

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total. 1906.	Total. 1905.	Total 1904.
Stocks, March 31 ..... *tons*	381	14 =	395	343	246
Arrivals, April	385	374 =	759	1422	1047
Aggregating	766	388 =	1154	1765	1920
Deliveries, April	406	362 =	768	1154	993
Stocks, April 30	360	26 =	386	611	303

	PARÁ.			ENGLAND.		
	1906.	1905.	1904.	1906.	1905.	1904.
Stocks, March 31 ..... *tons*	136	829	605	905	275	480
Arrivals, April	1900	1420	1460	1150	930	590
Aggregating	2036	2249	2065	2055	1205	1070
Deliveries, April	1769	1753	1955	775	850	575
Stocks, April 30	267	496	110	1280	355	405

	1906.	1905.	1904.
World's visible supply, April 30 ..... *tons*	3282	2403	1981
Pará receipts, July 1 to April 30	26,164	24,676	23,805
Pará Receipts of Caucho, same dates	4355	4364	3729
Afloat from Pará to United States, April 30	740	136	573
Afloat from Pará to Europe, April 30	609	805	500

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the sale of May 4 prices were irregular, but on an average were equal to valuations. The transactions comprised the following quantities:

	Exposed.	Sold.
Congo sorts ..... *tons*	406	394
Other sorts	112	72
	518	466

The next big sale by inscription will be held on May 30, when about 325 tons will be offered. C. SCHMID & CO., SUCCESSEURS.

Antwerp, Belgium, May 8, 1906.

MAY 4.—By the *Bruxellesville*, from the Congo:

Bunge & Co.	(Société Générale Africaine)	*kilos* 178,000	
Do	(Société A B I R)	18,000	
Do		17,000	
Do	(Chemins de fer Grand Lacs)	3 000	
L. & W. Van de Velde		8,000	
Comptoir Commercial Congolais		6 000	
Cie Commerciale des Colonies	(Cie. de. l'N'Keme et l'N'Keni)	6,000	
Cie. Commerciale des Colonies.	(La Haut Sangha)	20,000	
G & C. Krelinger	(Société "La Lobay")	5,000	
Société Général de Commerce	(Alimaienne)	5,000	
Société Coloniale Anversoise	(Cie. du Kasai)	89,000	
Do	(Belge du Haut Congo)	7 000	
Do	(Cie. de Lomami)	14,000	
Do		1 500	377,500

ANTWERP RUBBER STATISTICS FOR APRIL.

DETAILS.	1906.	1905.	1904.	1903.	1902.
Stocks, Mar. 31. *kilos*	641,650	323 945	700,735	271,884	841,678
Arrivals in April	392,199	651,928	179,098	605,743	307,834
Congo sorts	298 733	540,774	120,240	556 542	261,739
Other sorts	93,466	111,154	58,858	49,201	46,095
Aggregating	1,033,849	975,873	879.833	877,627	1,149 512
Sales in April	153,391	339.998	438,212	388,828	648,848
Stocks, April 31	880,458	635 875	441,621	488,799	500,664
Arrivals since Jan. 1	2,071,689	1,932 955	1,816.900	1,751,871	1,809,323
Congo sorts	1,573 515	1,542,898	1,443,046	1,565.539	1,698,426
Other sorts	498,174	390 057	373 854	186,332	110,897
Sales since Jan. 1	1,926,418	1,838,411	1,986,179	1,921.177	1,723.368

London.

EDWARD TILL & Co. report stocks [May 1]:

		1906.	1905.	1904.
LONDON	Pará sorts *tons*	—	—	—
	Plantation, Ceylon and Straits	37	—	—
	Borneo	50	12	9
	Assam and Rangoon	6	3	5
	Penang	194	170	—
	Other sorts	268	192	225
	Total	555	377	239
LIVERPOOL	Pará sorts	1271	356	495
	Caucho	324	298	282
	Other sorts	480	484	628
	Total, United Kingdom	2630	1515	1644
	Total, April	2108	1232	1367
	Total, March	1906	1264	1136
	Total, February	1539	1298	1341

MAY 11.—Lewis & Peat report: During the greater part of the past week we have had a very flat market, but it has partly recovered itself and closes firmer. The sales include fine hard at 5*s* 4*d*. @ 5*s*. 4½*d*. for forward delivery; Islands negroheads at 2*s*. 9½*d*. @ 2*s*. 10¼*d*. according to quality. Manáos scrappy in fair demand at 3*s*. 10¼*d*. on the spot, and for forward delivery. Cametás 3*s*. 1¼*d*. per pound value. *Plantation:* About 15 tons offered and partly sold, the price of ordinary biscuits being about 1*d*. per pound lower; crepe only ½*d*. down; scrap steady. At to-day's auctions: Mollendo fine 5*s*. 2½*d*; Beni Bolivian fine 5*s*. 3½*d*; Mangabeira very sandy sheet 2*s*. 5½*d*.; Columbian good scrap 3*s*. 8¼*d*. @ 3*s*. 10¼*d*.; Madagascar white ball 4*s*. 1*d*., Uganda character 4*s*. 1¾*d*.; Mozambique fine skins 4*s*. 6¼*d*. Balata, 99 packages block retired.

PLANTATION RUBBER.

MAY 11.—At to-day's auction 342 packages of Ceylon and Straits rubber were under offer—amounting to about 15 tons, of which 3 from Ceylon and 12 from the Straits. Owing to the increase in the size of sales of these rubbers lately, it has been decided, in the interests of the trade generally, that the auctions shall in future be held at the Commercial Sale Rooms, and this new arrangement was inaugurated to-day. Gow, Wilson & Stanton report these quotations: Fine sheet, 6*s*. 1½*d*. @ 6*s*. 2¼*d*. [=$1.50½]; fine pale washed crepe and ribbons, 6*s*. @ 6/2¼*d*.; fine pale worm, 6*s*. 2*d*.; fine biscuits, 6*s*. 1½d. @ 6*s*. 1¾*d*.; scrap, fine, 5*s* 2*d*. @ 5*s*. 3½*d*; scrap, medium, 4*s*. @ 4*s*. 9*d*; Rambong (*Ficus elastica*), 4*s*. 3½*d*. [=$1.04⅓]. Several packages Ceará were offered and bought in. The same firm report exports for the first three months of 1906—Ceylon, 31 tons; Straits, 56 tons; total, 87 tons.

Rubber Receipts at Manaos.

DURING March and nine months of the crop season for three years [courtesy of Messrs. Scholz & Co.]:

FROM—	MARCH. 1906.	1905.	1904.	JULY-MARCH. 1906.	1905.	1904.
Rio Purus-Acre ... *tons*	353	666	234	6331	5491	5165
Rio Madeira	158	337	356	2568	2628	2444
Rio Juruá	772	518	329	3284	3152	3111
Rio Javary—Iquitos	97	109	115	2490	2397	2183
Rio Solimões	90	66	46	932	788	735
Rio Negro	3	60	26	416	566	384
Total	1473	1756	1106	16021	15022	14022
Caucho	519	709	630	3450	3262	2760
Total	1992	2465	1736	19471	18284	16782

DURING April and ten months of the crop season for three years (courtesy of Messrs. Scholz & Co.):

FROM—	APRIL. 1906.	1905.	1904.	JULY-APRIL. 1906.	1905.	1904.
Rio Purús—Acre ... *tons*	142	308	360	6473	5799	5525
Rio Madeira	227	85	84	2795	2713	2528
Rio Jurua	318	567	348	3602	3719	3459
Rio Javary—Iquitos	106	131	23	2596	2528	2206
Rio Solimões	87	58	73	1019	846	808
Rio Negro	165	133	38	581	699	422
Total	1045	1282	926	17,066	16,304	14,948
Caucho	680	540	408	4130	3802	3168
Total	1725	1822	1334	21,196	20,106	18,116

Para Market.

R. O. AHLERS & Co. report [March 31]:

In consequence of advices of easier rates at the consuming centers, values here have given way. The lower rate of exchange, however, has come to the rescue and caused currency prices to benefit, so that dealers have shown themselves accommodating, and the tendency towards a relaxation of the recent high level of values has had a freer course without doing much harm to the local business. It does not seem likely, however, that the decline will continue and propagate for any length of time, for the fact that the market has come so well through the ordeal of the heavy receipts of the last few months, is a striking testimony of the strength of the general position, nor must it be overlooked that the time of diminishing receipts is near at hand.

R. O. AHLERS & Co. report [May 1]:

The brisk demand, which arrivals found in consequence of declining exchange, has given way to an absolute dull and inactive market, and whilst receipts of Upriver rubber have been almost nil, the moderate business in Island rubber has been handicapped by a slowly rising exchange. The fag end of the Upriver crop is

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for carload lots in cents per pound—are practically without change.

Old Rubber Boots and Shoes	– Domestic	7⅞ @ 8
Do	– Foreign	7⅜ @ 7½
Pneumatic Bicycle Tires		7⅛ @ 7¼
Solid Rubber Wagon and Carriage Tires		8½ @ 8⅞
White Trimmed Rubber		10½ @ 11
Heavy Black Rubber		5¼ @ 5½
Air Brake Hose		3¾ @ 3⅞
Fire and Large Hose		2⅞ @ 3
Garden Hose		2¼ @ 2⅜
Matting		1¼ @ 1⅜

not expected to come in before the second half of next month, so it may be taken as probable that our market will rule very quiet up to that time. Reports of an early fall of the rivers are now confirmed from all quarters, in consequence of which the new Sertão crop will start as early as July from the Madeira.

R. O. AHLERS & Co. report [May 11]:

The quiet tone which prevailed in the market throughout the last week has only momentarily been interrupted by the arrival of some larger lots of Sertão rubber, for which buyers have shown a more eager demand than might have been anticipated after the quiet news from the consuming centers. Milreis prices asked for these lots by holders have consequently been very high and found only reluctant buyers, as exchange developed a steady upward tendency during the last few days.

Liverpool.

EDMUND SCHLÜTER & Co. report [April 30]:

The reports from and the deliveries to the trade in Europe continue satisfactory, but deliveries in America were small, and the visible supply remains about what it was last month. The general opinion is, therefore, that the market will show no important alteration in the near future.

WORLD'S VISIBLE SUPPLY OF PARÁ, APRIL 30.

	1906.	1905	1904.	1903.	1902.
Tons	4965	3217	2777	4316	4895
Prices, hard fine	5/4	5/6¾	4/9	3/10¾	3/1¼

LIVERPOOL STOCKS OF AFRICAN RUBBER, APRIL 30.

1906 353	1903 551	1900 898
1905..... 355	1902 538	1899 473
1904..... 531	1901 792	1898 425

WILLIAM WRIGHT & Co. report [May 1]:

Fine Pará.—The market has been extremely quiet, and prices have declined fully 1*d.* per pound. Manufacturers generally have abstained from buying, but there are signs at the close of a more active demand. As the crop is now practically over, in view of the possible American requirements later on, in addition to an anticipated sharp decline in receipts at Manáos, European manufacturers would, we think, be acting wisely in taking advantage of the temporary decline in values. For future delivery sales are small, this owing to the fact that sellers will not quote far distant; a good business would be done for July and August if sellers would quote this position.

Rubber Stealing in Liverpool.

MESSRS. HYDES, LATHAM & CO., 28, Exchange street, East, advise THE INDIA RUBBER WORLD that burglars on a recent Saturday evening broke open their warehouse and took away rubber of the value of about £700 [=$3500]. The burglars left no trace behind, and the police have made no arrest. The local trade quickly raised a fund of £250 which has been guaranteed to the chief constable for disposal as a reward on conviction of the thieves. The firm write: "It would be interesting to the trade here to learn the ultimate destination of this and other parcels of stolen rubber, as the efforts of these warehouse robbers are developing on quite wholesale lines Should any of your subscribers be offered about 25 cwt. of Sierra Leone Manoh niggers, dry condition; about 7 cwt. old stored and very dry Madagascar ball, or about 2 cwt. old dry Pará, they may assist us by notifying us of the fact and stating through whom the offer was made."

Ceylon (Plantation) Rubber Exports, 1906.

DETAILS—BY WEEKS.

	POUNDS.		POUNDS.
January 1 to Mar. 19....	63,244	Total, 1906.....	79,574
Week ending Mar. 26...	2,833	Same dates, 1905.....	30,853
Week ending Apr. 2...	3,843	Same dates, 1904.....	24,062
Week ending Apr. 9...	1,924	Same dates, 1903.....	12,402
Week ending Apr. 16... } Week ending Apr. 23... }	7,730		

DESTINATION.

Great Britain.....	60,362	United States.....	11,335
Germany.....	7,072	Belgium.....	220
Australia	585		

IMPORTS FROM PARA AT NEW YORK.

[*The Figures Indicate Weights in Pounds.*]

May 1.—By the steamer *Gregory*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
N. Y. Commercial Co.	166,900	42,900	82,800	125,500=	418,100
A. T. Morse & Co.....	172,100	40,700	95,000	44,000=	351,800
Poel & Arnold.....	114,800	88,800	91,500	30 100=	325,200
Neale & Co.....	20,700	5,000	51,900	1,200=	78,800
Edmund Reeks & Co..	23,900	4,800	38,500	....=	67,200
Hagemeyer & Brunn..	32,000	2,700	19,700	....=	54,400
C. P. dos Santos.....	24,300	4,300	10,400	11,600=	50,600
General Rubber Co....	17,800	8,100	11,600	7,600=	45,100
Total.....	572.500	197,300	401,400	220,000=	1,391,200

May 5.—By the steamer *Dominic*, from Manáos and Pará:

A. T. Morse & Co.....	55,800	8,900	19 500	45,900=	130,100
General Rubber Co...	28,200	6,900	17,200	46,400=	98,700
N. Y. Commercial Co..	30,300	8,200	19,100	....=	57,600
Poel & Arnold.....	14,600	8,600	22,400	12,400=	58,000
G. Amsinck & Co.....	20,000	....	14,400	....=	34,400
Edmund Reeks & Co.	10,600	600	22,400	300=	33,900
Hagemeyer & Brunn..	6,000	3,400	25,400	....=	34,800
C. P. dos Santos.....	....	....	13,300	....=	13,300
Neale & Co.....	3,500	700	6,300	....=	10,500
Total.....	169,000	37,300	160,000	105,000=	471,300

May 14.—By the steamer *Fluminense*, from Manáos and Pará:

A. T. Morse & Co....	67,300	9,100	48,000	42,200=	166,600
Poel & Arnold	55,500	30,700	73,100	12,300=	171,600
N. Y. Commercial Co.	61,700	11,800	54,500	600=	128,600
General Rubber Co...	2,400	3,400	3,100	26,800=	35,700
Edmund Reeks & Co.	10,600	1,200	21,700	....=	33,500
G. Amsinck & Co.....	17,000	....	1,400	....=	18,400
Neale & Co.....	1,400	....	17,100	....=	18,500
Wm. E. Peck & Co...	...	....	10 100	....=	10,100
Hagemeyer & Brunn..	3,300	....	10,300	....=	13,600
C. P. dos Santos.....	....	....	3,700	....=	3,700
Total.....	219,200	56,200	243,000	81,900=	600,300

May 24.—By the steamer *Hubert*, from Manáos and Pará:

Poel & Arnold.....	48,500	25,500	67,400	115,400=	256,800
A. T. Morse & Co.....	65,200	8,300	50,500	36,200=	160,200
N. Y. Commercial Co .	23,000	15,100	30,700	7,800=	76,600
General Rubber Co ...	27,600	5,900	17 100	21,100=	71,700
Hagemeyer & Brunn..	35,300	1,400	15,600	.....=	52,300
Neale & Co.....	10,200	2,600	24,000	2,000=	38,800
Edmund Reeks & Co..	13,200	1,900	19,500	....=	36,600
Total.....	225,000	60,700	224,800	182,500=	693,000

[NOTE.—The steamer *Bernard* from Para, is due at New York, June 4, with 200 tons Rubber and 15 tons Caucho.]

PARA RUBBER VIA EUROPE.

	POUNDS	
APR. 24.—By the *Bovic*=Liverpool:		
Poel & Arnold (Fine).....	17,000	
APR. 26.—By the *Hudson*=Havre:		
Poel & Arnold (Coarse).....	7,000	
MAY 2.—By the *Carmania*=Liverpool:		
Poel & Arnold (Fine).....	22,000	
Poel & Arnold (Coarse).....	9,000	
A. T. Morse & Co (Coarse).....	11,000	42,000
MAY 3.—By the *Victorian*=Liverpool:		
Poel & Arnold (Caucho)..... ..	7,000	
MAY 9.—By the *Cevic*=Liverpool:		
Poel & Arnold (Fine)..	5,500	
MAY 14.—By the *La Touraine*=Havre:		
Poel & Arnold (Fine).	11,500	
MAY 18.—By the *Irishman*=Liverpool:		
Poel & Arnold 'Caucho).....	25,000	
MAY 19.—By the *Campania*=Liverpool:		
New York Commercial Co. (Fine)...	11,500	

OTHER ARRIVALS AT NEW YORK

CENTRALS.

		POUNDS.
APR. 23.—By the *Yucatan*=Mexico:		
E. Steiger & Co...	7,000	
Harburger & Stack	4,000	
H. Marquardt & Co	2,000	
Graham Hinkley & Co.	1,500	14,500
APR. 23.—By the *Batavia*=Hamburg:		
A. T. Morse & Co.....		3,500

CENTRALS—Continued.

APR. 23.—By the *Colon*=Colon:

Roldan & Van Sickle	7,000	
Dumarest Bros. & Co	3,800	
G. Amsinck & Co	2,700	
Aramburo Co	2 200	
A. Santos & Co	1,100	
Isaac Brandon & Bros	900	
Kunhardt & Co	900	
Wessels, Kulemkamp Co	800	
Bartling & De Leon	600	
W Loaiza & Co	700	20,700

APR. 23.—By the *Byron*=Bahia:

Adolph Hirsch & Co	13,000	
A. D. Hitch & Co	3,000	
J. H. Rossback & Bros	2,000	18,000

APR. 23.—By the *Proteus*=New Orleans:

A. T. Morse & Co		8,000

APR. 24.—By the *El Alba*=Galveston:

New York Commercial Co		22,000

APR. 26 By the *Sibiria*=Colombia:

Isaac Brandon & Bros	3 000	
Cortez Commercial Co	2,500	
Isaacs & Samuels	1,000	
Suzarte & Whitney	1,500	
Kunhardt & Co	500	
Mecke & Co	500	9 000

APR. 28.—By the *Esperanza*=Mexico:

H. Marquardt & Co.	8,500	
Thebaud Brothers	2.500	
E. Steiger & Co.	1 500	
American Trading Co	500	13,000

APR. 30.—By the *Niagara*=Tampico:

New York Commercial Co.	22,000	
Harburger & Stack	1,000	
European Account	22,000	45,000

APR. 30.—By the *Advance*=Colon:

Hirzel Feltman & Co	3.500	
E. B. Strout	2,500	6,000

MAY 1.—By the *Prins Aug. Wm.*=Colombia:

Pedro A. Lopez	5,000	
American Trading Co	2,500	
Seanz & Co	2,000	
Roldan & Van Sickle	2,500	
Punderford & Co	1,500	
Kunhardt & Co	1,000	
A. Held	1,000	
Mecke & Co	500	16,000

MAY 1.—By the *Venetia*=Colon:

G Amsinck & Co	1,500	
Eggers & Heinlein	1 500	
A. S. Lascellas & Co	500	
Thebaud Brothers	1,000	
R. G. Barthold	500	
George A. Alden & Co	1,000	6,000

MAY 2.—By the *Carmania*=Liverpool:

George A. Alden & Co		11,500

MAY 3.—By the *Panama*=Colon:

Hirzel Feltman & Co	10 000	
Mann & Emdon	3,000	
Bartling & DeLeon	500	13,500

MAY 3.—By the *Trent*=Carribbaen:

G. Amsinck & Co	4,000	
Striebel Brothers	2 000	
D. A. DeLima & Co.	1,000	
E B. Strout	500	
Mecke & Co	500	
Roldan & Van Sickle.	500	8,500

MAY. 5 —By the *El Paso*=New Orleans:

A. T. Morse & Co	3.500	
A. N. Rotholz & Co	3 000	
Manhattan Rubber Mfg. Co	3 000	10,000

MAY. 7.—By the *Vigilancia*=Mexico:

Harburger & Stack	6,500	
H. Marquardt & Co	5,000	
Graham, Hinkley & Co	3 500	
E. N. Tibbals Co	1,500	
Fred Probst & Co	1,000	
E. Steiger & Co	1 000	18,500

MAY 7.—By the *Carib II*=Ceiba:

Eggers & Heinlein	7,000	
H. W. Peabody & Co	500	
R. G. Bartholz	500	8,000

MAY 7.—By the *Proteus*=New Orleans:

A. T. Morse & Co	4,500	
G. Amsinck & Co	2,500	
A. N. Rotholz	2,000	9,000

MAY 8.—By the *Minnetonka*=London:

General Rubber Co		46,000

MAY 9.—By the *Allianca*=Colon:

Hirzel, Feltman & Co	6,000	
Dumarest & Co	5 000	
Piza, Nephews & Co	5,000	
Aramburo Co	4,000	
G. Amsinck & Co	3,000	
A. Santos & Co	2,000	
Isaac Brandon & Bros	2,000	
Roldan Van Sickle	1 500	
De Sola & Pardo	2.000	
Andreas & Co	1,500	
Wessels, Kulemkamp Co	1,000	
Graham, Hinkley & Co	1,000	
Lawrence Johnson & Co	500	
A. M. Capens Sons	500	35 000

MAY 12 —By the *El Sud*=Galveston:

Continental & Mexican Co		45,000

MAY 12.—By the *Monterey*=Mexico:

Harburger & Stack	15,000	
E. Steiger & Co	3,500	
Strube & Ultze	1,500	
American Trading Co.	1,500	21,500

MAY 14.—By the *Finance*=Colon:

Hirzel, Feltman & Co	16,000	
E. B. Strout	2,500	
Mann & Emdon.	2,500	
Isaac Brandon & Bros	1,000	22,000

MAY 14.—By the *Comus*=New Orleans:

Manhattan Rubber Mfg Co	1,500	
A. T. Morse & Co	1,500	
Eggers & Heinlein	1,000	4,000

MAY 14.—By the *City Washington*=Tampico:

Edward Maurer	22,500	
H. Marquardt & Co	1,000	
Harburger & Stack	1.000	24 500

MAY 15—By the *El Siglo*=Galveston:

Continental & Mexican Co		30 000

MAY 15.—By the *Alleghany*=Colombia:

Isaac Brandon & Bros	2,500	
Kunhardt & Co	3,500	
Roldan & Van Sickle	1,000	
A. N. Rotholz	500	
A. D. Straus & Co	500	8,000

MAY 17.—By the *Soldier Prince*=Bahia:

Adolph Hirsch & Co	10,000	
American Commercial Co	2,500	12,500

MAY 17.—By the *Orinoco*=Carribbaen:

G. Amsinck & Co	4,500	
Aramburo Co	2,000	
E. B. Strout	2,000	
George A. Alden & Co	2 000	
A. M. Capens Sons	1.500	12,000

MAY 18.—By the *Colon*=Colon:

Hirzel Feltman & Co	2,000	
Bartling & DeLeon	2,000	4,000

MAY 19 —By the *El Mar*=Galveston:

Continental & Mexican Co		56,000

MAY 19.—By the *Seguranca*=Mexico:

H. Marquardt & Co	1 500	
Graham, Hinkley & Co	1.500	
Fred Probst & Co	1,000	
E. N. Tibbals & Co	500	
American Trading Co	500	
E. Steiger & Co	500	5,500

MAY 21.—By the *Chalmette*=New Orleans:

A. T. Morse & Co	8,000	
A. N. Rotholz	3 000	11,000

MAY 21.—By the *Tennyson*=Bahai:

Adolph Hirsch & Co	11,000	
American Commercial Co	8,000	
Laurence Johnson & Co	2,000	21,000

MAY 21.—By the *Virginia*=Colombia:

Kunhardt & Co.	3 000	
Pedro A. Lopez	2,500	
L. N. Chemedlin & Co	2 000	
G Amsinck & Co.	1,500	
George A. Alden & Co	1,000	
Seanz & Co	500	
W. Loaiza & Co	500	11,000

MAY 23.—By the *El Norte*=Galveston:

Continental & Mexican Co		33,000

MAY 23.—By the *Sibiria*=Costa Rica:

Isaac Brandon & Bros	3.500	
Wessels, Kulemkamp Co	500	4,000

AFRICANS.

POUNDS.

APR 23.—By the *Batavia*=Hamburg:

George A. Alden & Co	17.000	
Earle Brothers	13,000	
Rubber Trading Co	2,000	32,000

APR. 23.—By the *Minneapolis*=London:

General Rubber Co		28,000

APR. 24.—By the *Bovic*=Liverpool:

Poel & Arnold		56,000

AFRICANS—Continued.

APR. 24.—By the *Finland*=Antwerp:

Rubber Trading Co		5,500

APR. 26.—By the *Teutonic*=Liverpool:

A. T. Morse & Co	5,500	
Rubber Trading Co	3,500	
George A. Alden & Co	2,000	11,000

APR. 26.—By the *Prins Eithel*=Hamburg:

Poel & Arnold		9 000

APR. 27.—By the *Patricia*=Hamburg:

George A. Alden & Co		27.000

APR. 30.—By the *Etruria*=Liverpool:

George A. Alden & Co		22,000

APR. 30.—By the *Cedric*=Liverpool:

General Rubber Co	56,000	
A. T. Morse & Co	23 000	
George A. Alden & Co	22,500	
Rubber Trading Co	2,500	103,500

MAY 1.—By the *Minneapolis*=London:

George A. Alden & Co		33,000

MAY 1—By the *Vaderland*=Antwerp:

Joseph Cantor		11,500

MAY 2.—By the *Carmania*=Liverpool:

General Rubber Co	63,000	
George A. Alden & Co	11,000	74,000

MAY 3.—By the *Victorian*=Liverpool:

Poel & Arnold		22,000

MAY 4.—By the *Baltic*=Liverpool:

Rubber Trading Co	11,000	
A. T Morse & Co	9.000	20,000

MAY 5.—By the *Lucania*=Liverpool:

George A. Alden & Co		17,000

MAY 7.—By the *Pretoria*=Hamburg:

Rubber Trading Co	7,000	
Earle Brothers	2,000	9,000

MAY 8.—By the *Kroonland*=Antwerp:

Joseph Cantor		16,500

MAY 9.—By the *Cevic*—Liverpool:

General Rubber Co		11,000

MAY 9.—By the *Peninsular*=Lisbon:

General Rubber Co		56,000

MAY 10.—By the *Westerland*=Antwerp:

Poel & Arnold		17,000

MAY 10.—By the *Majestic*=Liverpool:

A. T. Morse & Co		13,500

MAY 14.—By the *Waldersee*—Hamburg:

General Rubber Co	16,000	
A. T. Morse & Co	4.500	20 500

MAY 14.—By the *Umbria*=Liverpool:

General Rubber Co	45 000	
George A. Alden & Co	5,000	
Rubber Trading Co	9.000	
Joseph Cantor	3,500	62 500

MAY 15.—By the *Zeeland*=Antwerp:

George A. Alden & Co	30,000	
Poel & Arnold	4,500	34,500

MAY 17.—By the *Caronia*=Liverpool:

General Rubber Co	57,000	
Poel & Arnold	45 000	
George A. Alden & Co	33 000	
A. T. Morse & Co	5,000	140,000

MAY 18.—By the *Irishman*=Liverpool:

Poel & Arnold		22,500

MAY 19.—By the *Campania*—Liverpool:

George A. Alden & Co	30,000	
General Rubber Co	13,500	43,500

MAY 19.—By the *La Savoie*—Havre:

Rubber Trading Co		7 000

MAY 21.—By the *New York*—London:

General Rubber Co	25,000	
George A. Alden & Co	20,000	45.000

MAY 21.—By the *Kaiserine Victoria*—Hamburg:

A. T. Morse & Co		20 000

MAY 21.—By the *Finland*=Antwerp:

A. T. Morse & Co.	95,000	
George A. Alden & Co	85 000	
Western Electric Co	30,000	
Joseph Cantor	16,000	
Poel & Arnold.	15,000	
Robinson & Stiles	15,000	
Rubber Trading Co	4,000	260,000

EAST INDIAN.

APR. 23.—By the *Batavia*—Hamburg:
F. R. Muller & Co 5,000

APR. 23.—By the *Minneapolis*—London:
George A. Alden & Co 9,000
Poel & Arnold 2,000 11,000

APR. 23.—By the *Indramayo*—Singapore:
George A. Alden & Co. 35 000
Pierre T. Betts 25 000
Heubler & Co 5,000
Poel & Arnold 5,000 70,000

APR. 28.—By the *Barenfels*—Calcutta:
George A. Alden & Co 7,000

MAY 3.—By the *Reichenfels*—Calcutta:
A. T. Morse & Co 2,000

MAY 7.—By the *Philadelphia*—London:
Poel & Arnold 9,000

MAY 8.—By the *Minnetonka*—London:
Robinson & Stiles 11,300
A. T. Morse & Co 2,000
George A. Alden & Co 2 000 15,300

MAY 14.—By the *St. Paul*—London:
Poel & Arnold 13,500

MAY 14.—By the *Manchester*—Colombo:
A. T. Morse & Co 4,500

MAY 18.—By the *Irishman*—Liverpool:
Poel & Arnold 8,000

MAY 19.—By the *Yeddo*—Singapore:
George A. Alden & Co 80,000
Heubler & Co 30,000
Poel & Arnold 25,000
Pierre T. Betts 11,000
F. R. Muller & Co 11,000 157,000

APR. 21.—By the *New York*—London:
A. T. Morse & Co 3 500

MAY 22.—By the *Armenian*—Liverpool:
Poel & Arnold 9,000

EAST INDIAN.—Continued.

MAY 22.—By the *Minneapolis*—London:
George A. Alden & Co 3,500

GUTTA-JELUTONG.

APR. 23.—By the *Indramayo*—Singapore:
George A. Alden & Co 160,000
Pierre T. Betts 95,000
Poel & Arnold 160.000
L. Littlejohn & Co 125,000 540,000

MAY 19.—By the *Yeddo*—Singapore:
Heubler & Co. 260,000
L. Littlejohn & Co. 100,000
W. Tappenbach Co 55,000
Pierre T. Betts 30,000 445,000

GUTTA-PERCHA AND BALATA.

POUNDS.

APR. 23.—By the *Batavia*—Hamburg:
Earle Brothers 11,300

APR. 23.—By the *Minneapolis*—London:
F. R. Muller & Co 30,000

APR. 23. By the *Indramayo*—Singapore:
Heubler & Co 15,000
Earle Brothers 6,000 21 000

MAY 19.—By the *La Savoil*—Havre:
George A. Alden & Co. 2,500

MAY 21.—By the *Kaiserin Victoria*—Hamburg:
To Order 7,500

BALATA.

APR. 23.—By the *Batavia*—Hamburg:
Earle Brothers 13,500

APR. 23.—By the *Minneapolis*—London:
F. R. Muller & Co. 7,000

MAY 7.—By the *Maracas*—Trinidad:
Thebaud Brothers. 5,000
Newman & Landon. 1.500 6,500

MAY 9.—By the *Potsdam*—Rotterdam:
George A. Alden & Co 1,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—APRIL.

Imports:	Pounds.	Value.
India-rubber	5,437,360	$4,443,292
Gutta-percha	23,293	10,235
Gutta jelutong (Pontianak)	1,915 845	54,521
Total	7,376 498	$4,508,048
Exports:		
India-rubber	69,610	$ 49,483
Reclaimed rubber	70,882	8,991
Rubber scrap Imported	851,844	$ 65,374

BOSTON ARRIVALS.

POUNDS.

APR. 2.—By the *Rapollo*—Hamburg:
George A. Alden & Co.—African 51,635

APR. 5. By the *Coulsdon*—Singapore:
George A Alden & Co.—East Indian.. 96

APR 5.—By the *Philadelphian*—London:
George A. Alden & Co.—East Indian... 2,326

APR. 7.—By the *Sylvania*—Liverpool:
George A. Alden & Co.—African 6,616

APR. 20.—By the *Cestrian*—Liverpool:
George A. Alden & Co.—African..... 26,511

APR. 23.—By the *Cymric*—Liverpool:
Poel & Arnold.—African..... 25 771
George A. Alden.—African..... 11,600 37,371

Total 124.745

[Value $85,000.]

GUTTA-PERCHA.

APR. 28.—By the *Halifax*—Halifax:
Returned stuff..... 2,433

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.

MONTHS.	IMPORTS	EXPORTS	NET IMPORTS.
March, 1906...	5,949 384	295,071	5,654,313
January-February...	13,148 240	687,488	12,460,752
Three months. 1906...	19,097,624	982,559	18,115,065
Three months, 1905 ...	26,412.435	728,345	25,684 087
Three months, 1904...	23 266,349	909,245	22,357,104

GREAT BRITAIN.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
March, 1906...	6,650,896	3.719,632	2,931,264
January-February...	10,996,272	6,156,192	4 840,080
Three months, 1906...	17,647.168	9,875,824	7,771.344
Three months, 1905...	15.993,376	10,248,456	5,744.920
Three months, 1904...	16,589,216	10 119 430	6,469.786

GERMANY.

MONTHS	IMPORTS	EXPORTS.	NET IMPORTS.
March, 1906 ...			
January-February...	8,955.980	2,666,180	6,289,800
Three months. 1906...			
Three months, 1905...	11,233,860	4,007,300	7,226,560
Three months, 1904...	9,189,180	3,149,740	6,039,440

ITALY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
March, 1906...	252,780	9,460	243,320
January-February...	452,980	60,720	392,260
Three months, 1906 ...	705,760	70,180	635,580
Three months, 1905...	417.340	66 220	351.120
Three months, 1904...	447.480	25 960	421,520

FRANCE.*

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
March, 1906 ...	3,997,840	1,703,020	2,294 820
January-February...	4,986,520	2,476,320	2,510,200
Three months. 1906 ...	8,984,360	4,179 340	4,805,020
Three months, 1905...	7,165,180	2,894,980	4,270,200
Three months, 1904...	5,971,680	3,824,260	2,147,420

AUSTRIA-HUNGARY.

MONTHS.	IMPORTS	EXPORTS	NET IMPORTS
March, 1906..			
January-February...	687,940	440	687,500
Three months, 1906...			
Three months, 1905...	723,360	1,100	722,260
Three months. 1904...	769,340	10,340	759 000

BELGIUM †

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
March, 1906...	2,395 384	1,300,818	1,094,566
January-February. ...	3,313,189	1,521.091	1,792,038
Three months, 1906...	5,708,573	2,821.909	2.886,664
Three months, 1905...	4,205.913	3,000,940	1,204,973
Three months, 1904...	5,109.984	4.014 579	1 095,405

NOTE.—German statistics include Gutta-percha, Balata, old (waste) rubber, and substitutes. British figures include old rubber. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

*General Commerce. †Special Commerce.

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BUYERS' DIRECTORY OF THE RUBBER TRADE.

CLASSIFIED LIST OF MANUFACTURERS AND DEALERS IN INDIA-RUBBER GOODS AND RUBBER MANUFACTURERS' SUPPLIES.

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Hose (Fire, Garden, Steam).

Mats and Matting.

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Packing.

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Cincinnati Rubber Mfg. Co., Cincinnati.
Cleveland Rubber Co., Cleveland, O.
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The Dermatine Co., London.
Dunlop Tire & Rubber Goods Co., Toronto.
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Gutta Percha & Rubber Mfg. Co., Toronto.
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International A. & V. Tire Co., Milltown, N. J.
Lake Shore Rubber Co., Erie, Pa.
Liverpool Rubber Co., Liverpool, Eng.
Chas. Macintosh & Co., Ltd., Manchester, England.
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Boston Belting Co., Boston-New York.
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Canadian Rubber Co. of Montreal.
Eureka Fire Hose Co., New York.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston-New York.

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Gustave Kush, New York.
Liverpool Rubber Co., Liverpool, Eng.
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Republic Rubber Co., Youngstown, Ohio.
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Boston Belting Co., Boston, Mass.
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Cleveland Rubber Co., Cleveland, O.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Liverpool Rubber Co., Liverpool, Eng.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago, Ill.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Liverpool Rubber Co , Liverpool, Eng.
National India Rubber Co., Bristol, R. I.

Gas Bags (Rubber).—Continued.

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Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

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Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, O.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York
Mattson Rubber Co.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Home Rubber Co., Trenton, N. J.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Hose—Armored.
Hose—Wire Wound.

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Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Electric Hose & Rubber Co. Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Chas. Macintosh & Co., Ltd., Manchester, England.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York,
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crate Co., Sharon Center, Ohio.

Hose Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Hose Linings.

Boston Belting Co., Boston-New Yrok.
Boston Woven Hose & Rubber Co.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston.

Hose—Protected.

Boston Belting Co., Boston-New York
Gutta Percha & Rubber Mfg. Co., N. Y.
Electric Hose & Rubber Co., Wilmington, Del.
Revere Rubber Co , Boston-New York
Voorhees Rubber Mfg. Co., Jersey City.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

COTTON AND LINEN.

Boston Belting Co., Boston-New York
Boston Woven Hose & Rubber Co.
Gutta Percha& Rubber Mfg. Co., N. Y.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Co., New York.
Eureka Rubber Mfg. Co. of Trenton.
Fabric Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha and Rubber Mfg. Co. of Toronto.

Hose—Rubber Lined.—Continued.

COTTON AND LINEN.

Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York,
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Boston Belting Co., Boston-New York.
Electric Hose & Rubber Co., Wilming-Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.

"Jenkins '96" Packing.

Jenkins Bros., New York.

Lawn Sprinklers.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston New York.

Mould Work.

[*See Mechanical Rubber Goods.*]

Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Mattson Rubber Co., New York.
Mitzel Rubber Co., Akron, O.
Plymouth Rubber Co., Stoughton, Mass
Tyer Rubber Co., Andover, Mass.

"Nubian" Packing.

Voorhees Rubber Mfg. Co., Jersey City.

Oil Well Supplies.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Paper Machine Rollers.

Boston Belting Co., Boston-New York
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Peerless Rubber Mfg. Co., New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Republic Rubber Co., Youngstown, O.

Pump Valves.

[*See Mechanical Rubber Goods.*]

Jenkins Bros., New York.
Revere Rubber Co., Boston, Mass.

Rollers—Rubber Covered.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston New York.

Sewing Machine Rubbers.

B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hardman Rubber Co., Belleville, N. J.
Liverpool Rubber Co., Liverpool, Eng.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Liverpool Rubber Co., Liverpool, Eng.
Manhattan Rubber Mfg. Co., New York
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston.

Tiling.

Canadian Rubber Co. of Montreal, Ltd.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
Voorhees Rubber Mfg. Co., Jersey City.

Tires.

AUTOMOBILE, BICYCLE, AND CARRIAGE.

Canadian Rubber Co. of Montreal, Ltd.
Continental Caoutchouc & Guttapercha Co., Hanover.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Fisk Rubber Co., Chicopee Falls, Mass.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., Toronto.
Healy Leather Tire Co., New York.
International A. & V. Tire Co., Milltown, N. J.
Kokomo Rubber Co., Kokomo, Ind.
Lake Shore Rubber Co., Erie, Pa.
Liverpool Rubber Co., Liverpool, Eng
Chas. Macintosh & Co., Ltd., Manchester, Eng.
North British Rubber Co., Ltd., Edinburgh.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.

AUTOMOBILE AND CARRIAGE.

Boston Belting Co., Boston-New York.
Eureka Rubber Mfg. Co., Trenton, N. J.
Revere Rubber Co., Boston-New York.

Tubing.

[*See Mechanical Rubber Goods*]

American Hard Rubber Co., New York.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Hardman Rubber Co., Belleville, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Valves.

[*See Mechanical Rubber Goods.*]
Jenkins Bros., New York-Chicago.

Vulcanite Emery Wheels.

Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co. Ltd., New York.

Wringer Rolls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES

Atomizers.

Bandages.

Bulbs.

Syringes.

Water Bottles.

Druggists' Sundries—General.

American Hard Rubber Co., New York.
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Est. of Jos. Bachrach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
International A. & V. Tire Co., Milltown, N. J.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Mitzel Rubber Co., Akron, O.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass

Balloons.

King & Leatherow, Newark, N. J.

Balls, Dolls and Toys.

New York Rubber Co., New York.

Combs.

American Hard Rubber Co., New York

Elastic Bands.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, Ohio.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Mattson Rubber Co., New York.

Finger Cots.

Cleveland Rubber Co., Cleveland, Ohio.
Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

Gloves.

Canadian Rubber Co. of Montreal.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
King & Leatherow, Newark, N. J.
National India Rubber Co., Bristol, R. I.
Pure Gum Specialty Co., Barberton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Davol Rubber Co., Providence, R. I.
Hardman Rubber Co., Belleville, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.

Est. of Jos. Bacharach, Brooklyn, N. Y.
Cleveland Rubber Co., Cleveland, Ohio
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
National India Rubber Co., Bristol, R. I.
Pure Gum Specialty Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Nipples.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O
Tyer Rubber Co., Andover, Mass.

Seamless Rubber Goods.

H. A. Kaysan, Cassel, Germany.

Shower Bath Sprinklers.

A. Schrader's Son, Inc., New York.

Sponges (Rubber).

Faultless Rubber Co., Ashland, Ohio.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass

Stopples (Rubber).

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y
A. Schrader's Son, Inc., New York.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS

Air Goods (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
New York Belting & Packing Co., New York.
National India Rubber Co., Providence.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Cleveland Rubber Co., Cleveland, Ohio.
Davol Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.

Calendering.

La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
Gutta Percha & Rubber Mfg. Co., Toronto.
National India Rubber Co., Bristol, R. I.

Clothing.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Apparatus.

A. Schrader's Son., Inc., New York.

Diving Dresses.

Hodgman Rubber Co., New York.

Dress Shields.

Mattson Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.

[*See Clothing.*]

Proofing.

Canadian Rubber Co. of Montreal.
La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.

Cravenette Co., Ltd.

Rubber Coated Cloths.

Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR

Boots and Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Alfred Calmon, Ltd., Hamburg, Germany.
Canadian Rubber Co. of Montrea
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Liverpool Rubber Co., Liverpool, Eng.
Lycoming Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.

Boots and Shoes.—Continued.

National India Rubber Co., Boston.
North British Rubber Co., Ltd., Edinburgh.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Guttapercha Co., Hanover.
Grieb Rubber Co., Trenton, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Springfield Elastic Tread Co., Springfield, Ohio.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co. Boston.
Granby Rubber Co., Granby, Quebec.
La Crosse Rubber Mills Co., La Crosse, Wis.
Liverpool Rubber Co., Liverpool, Eng.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER

Dental Gum.

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., New York.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL

Electrical Supplies.

American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Massachusetts Chemical Co., Boston.
Tyer Rubber Co., Andover, Mass.

Friction Tape.

Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Rubber Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Joseph Stokes Rubber Co., Trenton, N. J.

Insulating Compounds.

Canadian Rubber Co. of Montreal.
Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.

National India Rubber Co., Providence

Splicing Compound.

Home Rubber Co., Trenton, N. J.

RUBBER BUYERS' DIRECTORY—CONTINUED.

SPORTING GOODS

Foot Balls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Golf Balls.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Submarine Outfits.

Hodgman Rubber Co., New York.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Striking Bags.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, Ohio.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

MISCELLANEOUS

Boiler Specialist.

H. W. Jones, New York.

Cement (Rubber).

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Hadley Cement Co., Lynn, Mass.
Manhattan Rubber Mfg. Co., New York
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

Chemical Analyses.

Durand Woodman, Ph D., New York.
H. L. Terry, Manchester, England.

Chemists.

Stephen P. Sharples, Boston, Mass.
Durand Woodman, Ph. D., New York.

Engraver.

P. C. Smith, Boston, Mass.

Laboratory—Tests, Analyses.

G. E. Heyl-Dia, New York.

Rubber Journals.

Gummi-Zeitung, Dresden, Germany.

Rubber Planting.

Ohio Rubber Culture Co., Canton Ohio.

Rubber Tree Seeds.

J. P. William & Bros., Heneratgoda, Ceylon.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER MACHINERY

Acid Tanks.

Birmingham Iron Foundry, Derby, Ct.

Band Cutting Machine.

A. Adamson, Akron, O.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Belt Folding Machines.

Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Slitters.
Cloth Dryers.
Gearing.
Shafting.
Wrapping Machines.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Stretchers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Hoggson & Pettis Mfg. Co., New Haven.

Boilers.

William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Braiders.

New England Butt Co., Providence, R. I.

Buckles.

The Weld Mfg. Co., Boston.

Cabling Machinery.

Alton Machine Co., New York.

Calenders.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach Co., Ansonia, Ct.

Chucks (Lathe).

Hoggson & Pettis Mfg. Co., New Haven.

Churns.

American Tool & Machine Co., Boston.

Clutches.

Farrel Foundry & Mach. Co., Ansonia, Ct

Crackers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Devulcanizers.

Alton Machine Co., New York.
Biggs Boiler Works Co., Akron, Ohio.
Birmingham Iron Foundry, Derby, Ct.
Edred W. Clark, Hartford, Ct.
William R. Thropp, Trenton, N. J.

Dies.

John J. Adams, Worcester, Mass.
Barbour Bros., Trenton, N. J.
T. J. Beaudry, Marlboro, Mass.
Brockton Die Co., Brockton, Mass.
J. W. Dewees, Philadelphia, Pa.
Hoggson & Pettis Mfg. Co., New Haven.
Independent Die Co., Brockton, Mass.

Doubling Machines.

American Tool & Machine Co., Boston.

Drying Apparatus.

American Process Co., New York.

Drying Machines.

Alton Machine Co., New York.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.

Textile-Finishing Machinery Co., Providence, R. I.

Engines, Steam.

Alton Machine Co., New York.
William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Engraving Roll.

Hoggson & Pettis Mfg. Co., New Haven.

Forms.

Summit China Co., Akron, Ohio.

Grinders and Mixers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Hangers.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Hose Machines.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.

Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Hydraulic Machinery.
Insulating Machinery.
Iron Castings.

Alton Machine Co., New York.

Lasts (Rubber Shoe).

Middlesex Last Co., Boston.

Lathes—Hard Rubber.

A. Adamson, Akron, Ohio.

Lathes—Jar Ring.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
William R. Thropp, Trenton, N. J.

Machinists' Tools.

Hoggson & Pettis Mfg. Co., New Haven.

Moulds.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
W. E. Arnold, Malden, Mass.
Barbour Bros., Trenton, N. J.

Moulds.—Continued.

Birmingham Iron Foundry, Derby, Ct.
J. W. Dewees, Philadelphia, Pa.
Hoggson & Pettis Mfg. Co., New Haven.

Pillow Blocks.

Farrel Foundry & Mach. Co., Ansonia, Ct

Presses (for Rubber Work.)

A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse, N. Y.
Edred W. Clark, Hartford, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Pumps

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse.
Farrel Foundry & Mach. Co., Ansonia, Ct

Racks for Boot and Shoe Cars.

Hoggson & Pettis Mfg. Co., New Haven.

Reducing Valves.

Mason Regulator Co., Boston.

Rollers (Hand).

Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.

Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Separators.

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Separators for Reclaimed Rubber.

American Process Co., New York.

Special Rubber Machinery.

Alton Machine Co., New York.
Wellman Sole Cutting Machine Co., Medford, Mass.

Spreaders.

Alton Machine Co., New York.
American Tool & Machine Co., Boston
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Steam Traps and Specialties.

Jenkins Bros., New York.
Mason Regulator Co., Boston.
Osgood Sayen, Philadelphia, Pa.

Steel Stamps.

Hoggson & Pettis Mfg. Co., New Haven.

Stitchers (Hand).

Hoggson & Pettis Mfg. Co., New Haven

Strip Covering Machines.
Strip Cutters.

Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Tire Molds.

Bay State Machine Co., Erie, Pa.

Tubing Machines.

A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Edred W. Clark, Hartford, Ct.
John Royle & Sons, Paterson, N. J.

Vacuum Drying Chambers.

Alton Machine Co., New York.
Joseph P. Devine Co., Buffalo, N. Y.

Varnishing Machines.

Birmingham Iron Foundry, Derby, Ct.

Vulcanizers.

Alton Machine Co., New York.
Biggs Boiler Works Co., Akron, Ohio.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.
John E. Thropp's Sons Co., Trenton, N. J.

Washers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Wire Insulating Machines.

Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Wire Rope Machinery.

Alton Machine Co., New York.

SECOND-HAND MACHINERY.

Philip Broomfield, Boston, Mass.
W. C. Coleman Co., Rochelle Park, N. J
Philip McGrory, Trenton, N. J.
M. Norton & Co., Charlestown, Mass.

FACTORY SUPPLIES

Acid (Carbolic).

Barrett Mfg. Co., Philadelphia.

Antimony, Sulphurets of.

GOLDEN.

Actien-Ges. Georg Egestorff's Salzwerke, Linden, Germany.
Atlas Chemical Co., Newtonville, Mass.

GOLDEN AND CRIMSON.

Joseph Cantor, New York.
Geo. F. Lufbery, Jr., Elizabeth, N. J.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

Balata.

George A. Alden & Co., Boston.

Benzol.

Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.

Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.

Boxes (Wood).

Henry H. Sheip & Co., Philadelphia.

Brass Fittings.

A. Schrader's Son, Inc., New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS—CONTINUED.

Carbon Bisulphide.
George W Speaight, New York.

Caustic Soda.
Acker Process Co., Niagara Falls, N. Y.

Chemicals.
Acker Process Co., Niagara Falls, N. Y.
George W. Speiaght, New York.
S. P. Wetherill Co., Philadelphia, Pa.

Colors.
Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.
S. P. Wetherill Co., Philadelphia, Pa.

Crude Rubber.
George A. Alden & Co., Boston.
A. W. Brunn & Co., New York.
Hagemeyer & Brunn, New York.
Adolph Hirsch & Co., New York.
F. R. Müller & Co., New York.
Para Recovery Co., Bayonne, N. J.
Rubber Trading Co., New York-Boston.

Dermatine.
The Dermatine Co., London.

Drills.

Duck (Cotton).
J. H. Lane & Co., New York.

Gilsonite.
William H. Scheel, New York.

Graphite.
United States Graphite Co., Philadelphia.

Graphite Grease.
Jos. Dixon Crucible Co., Jersey City.

Guayule Rubber.
Ed. Maurer, New York.

Gutta-Percha.
George A. Alden & Co., Boston.
Rubber Trading Co., New York-Boston

Hose Bands, Straps & Menders.
Boston Woven Hose & Rubber Co.
William Yerdon, Fort Plain, N. Y.

Hose Pipes, Nozzles & Couplings.
Boston Woven Hose & Rubber Co.
Eureka Fire Hose Co., New York.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.

Hydro-Carbon Products.
Geo. A. Alden & Co., Boston.
William H. Scheel, New York.

Infusorial Earth.
Stamford (Conn.) Rubber Supply Co.

Lampblack.
Samuel Cabot, Boston.

Lawn-Hose Supporters.
C. J. Bailey & Co., Boston.

Lead—Blue.

Lead—Sublimed White.
Pieber Lead Co., Chicago, Ill.

Lithopone.
Gabriel & Schall, New York.

Naphtha.
Barrett Mfg. Co., Philadelphia.

Paris White and Whiting.
H. P. Taintor Mfg. Co., New York.

Reclaimed Rubber.
Alkali Rubber Co., Akron, Ohio.
American Reclaimed Rubber Co., Rochelle Park, N. J.
P. H. Appleton & Son, Boston.
Bloomingdale (N. J.) Soft Rubber Co.
E. H. Clapp Rubber Co., Boston, Mass.
Danversport Rubber Co., Boston.
Derby Rubber Co., Derby, Conn.
Eastern Rubber Co., New York.
Trenton (N. J.) Rubber Reclaiming Works.
Manufactured Rubber Co.
New Jersey Rubber Co., Lambertville, N. J.
Pequanoc Rubber Co., Butler, N. J.
Philadelphia Rubber Wks., Philadelphia.
Stockton Rubber Co., Stockton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
S. & L. Rubber Co., Chester, Pa.
U. S. Rubber Reclaiming Wks., N. Y.
Westmoreland Rubber Mfg. Co., Grapeville, Pa.

AGENTS AND DEALERS

Goldberg & Rathman, Boston, Mass.
Philip McGrory, Trenton, N. J.
H. P. Moorhouse, Paris, France.
Rubber Trading Co., New York-Boston.
Wm. Somerville's Sons, Liverpool.

Scrap Rubber.
L. Albert & Son, Trenton, N. J.
Bers & Co., Philadelphia.
P. Broomfield & Co., Boston.
C. Clifford, Baltimore, Md.
W. C. Coleman Co., Rochelle Park, N. J.
Wm. H. Cummings & Sons, New York.
Goldberg & Rathman, Boston, Mass.
Theodore Hofeller & Co., Buffalo, N. Y.
A. W. Leslie & Co., Ltd., London, Eng.
B. Loewenthal & Co., New York and Chicago.
J. Loewenthal & Sons, Chicago.
Philip McGrory, Trenton, N. J.
Meyer Bros., Philadelphia, Pa.
Trenton (N. J.) Rubber Reclaiming Works.
M. Norton & Co., Charlestown, Mass.
Henry P. Rindskopf, Brooklyn, N. Y.
San Giacomo Sons, Newark, N. J.
J. Schnurmann, London.
Schwab & Co., Philadelphia.
United States Waste Rubber Co., Brockton, Mass.
M. J. Wolpert, Odessa, Russia.

Substitute.
Joseph Cantor, New York
Geo. F. Lufbery, Jr., Elizabeth, N. J.
Massachusetts Chemical Co., Boston.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

Sulphur.
Battelle & Renwick, New York.
T. & S. C. White Co., New York.

Sulphur Chloride.
Acker Process Co., Niagara Falls, N. Y.
William H. Scheel, New York.
George W. Speaight, New York.
Stamford (Conn.) Rubber Supply Co.

Tire Fabrics.
J. H. Lane & Co., New York.

Tire Valves.
A. Schrader's Son, Inc., New York.

Valves for Air Goods.
A. Schrader's Son., Inc., New York.

Wooden Shells.
Adolph Martin, Passaic, N. J.

Zinc Sulphide.
Joseph Cantor, New York.
Typke & King, London, England

Zinc White.
New Jersey Zinc Co., New York.
Stamford (Conn.) Rubber Supply Co

BUYERS' DIRECTORY
—FOR—
Rubber Tires and Accessories.

Auto Top Fabrics.
Chase & Co., L. C., Boston, Mass.
Hodgman Rubber Co., New York.
Mutty & Co., L. J., Boston, Mass.
National India Rubber Co., Bristol, R. I.

Cases, Tire.
Gilbert Mfg. Co., New Haven, Conn.

Covers, Tire.
Wiley & Son Co., Wm. H., Hartford, Conn.

Fabrics.
Chase & Co., L. C., Boston, Mass.
Lane & Co., J. H., New York.
Mutty & Co., L. J., Boston, Mass.
National India Rubber Co., Bristol, R. I.

Insulated Wires.
Clark Insulation Co., Boston, Mass.
National India Rubber Co., Bristol, R. I.

Mats, Automobile.
Boston Woven Hose & Rubber Co., Cambridge, Mass.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston, Mass.

Pumps, Tire.
Pacific Tucking & Mfg. Co., Brooklyn, N. Y.

Repair Stock.
Trenton Rubber Mfg. Co., Trenton, N. J.

Rims, Wheel.
Hartford Rubber Works Co., Hartford, Conn.
Goodrich Co., B. F., Akron, Ohio
Goodyear Tire & Rubber Co., Akron, Ohio.

Tires.
Bailey & Co., C. J., Boston, Mass.
Calmon, Ltd., Alfred, Hamburg, Germany.
Continental Caoutchouc Co., New York.
Consolidated Rubber Tire Co., New York—Akron, Ohio.
Diamond Rubber Co., Akron, Ohio.
Electric Rubber Mfg Co., Rutherford, N. J.
Firestone Tire & Rubber Co., Akron, Ohio.
Fisk Rubber Co., Chicopee Falls, Mass
F. W. Skinner, Advance Tire Co., Valley Falls, R. I.
G. & J. Tire Co., Indianapolis, Ind.
Goodrich Co., B. F., Akron, Ohio.
Harburg Tire Co, Harburg, Germany.
Harburg-Vienna India Rubber Co, Harburg, Germany.
Hartford Rubber Works Co., Hartford, Conn.
Healy Leather Tire Co., New York.
Indiana Rubber & Insulated Wire Co., Jonesboro, Ind.
International A. & V. Tire Co., Milltown, N. J.
Kasner, A. H., New York.
Macintosh & Co, Ltd., Chas., Manchester, England.
Michelin Products Selling Co, New York.
Michelin Tire American Agency, Inc., New York.
Mitchell Punctureless Pneumatic Tire Co., Swampscott, Mass.
Morgan & Wright, Chicago, Ill.
Motz Clincher Tire & Rubber Co., Akron, Ohio.
North British Rubber Co., Ltd., Edinburgh, Scotland.
Pirelli & Co., Milan, Italy.
Republic Rubber Co., Youngstown, Ohio.
Sirdar Rubber Co., Ltd., London, England.
St. John Rubber Tire Co., Inc., New York.
Sweet Tire & Rubber Co., Batavia, N. Y.
Swinehart Clincher Tire & Rubber Co., Akron, Ohio.
Trenton Rubber Mfg. Co., Trenton, N. J.
United Berlin Frankfort India Rubber Co., Ltd., Berlin, Germany.
Universal Tire Co., N. Y.

Tire Applying Machines.
Nelson & Le Moon, Chicago, Ill.

Tire Cases.
Gilbert Mfg. Co., New Haven, Conn.

Tire Covers.
Wiley & Son Co., Wm. H., Hartford, Conn.

Tire Fabrics.
Lane & Co., J. H., New York.

Tire Pumps.
Pacific Tucking & Mfg. Co., Brooklyn, N. Y.

Tire Repairing.
Boston Vulcanizing Co., Boston, Mass.
Foote Rubber Co., D. E., Cleveland, Ohio.
Republic Rubber Tire & Shoe Co., New York.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Treads.
Boston Woven Hose & Rubber Co., Cambridge Mass.
Leather Tire Goods Co., Newton Upper Falls, Mass.
Manhattan Rubber Mfg. Co., New York.
Revere Rubber Co., Boston, Mass.

Valves, Tire.
Schrader's Sons, Inc., A., New York.

Vulcanizer, Tire.
Auto Tire Vulcanizing Co., Lowell, Mass.

Wires, Insulated.
Clark Insulation Co., Boston, Mass.
National India Rubber Co., Bristol, R. I.